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Cow's Milk—as sold in Towns.		Human Milk—direct from Breast.	
Reaction.	Acid	Reaction.	Alkaline
Specific gravity	1·031	Specific gravity	1·027
Water	87·0	Water	87·5
Fat	3·5	Fat	3·8
Casein	3·0	Casein	1·0
Albumin	0·5	Albumin	1·2
Milk Sugar	4·5	Milk Sugar	6·2
Bacteria	very numerous	Bacteria	absent

Thus cow's milk contains an excess of casein which curdles in the infant's stomach, and a deficiency in soluble albumen and sugar. Condensed milk, on the other hand, contains an excess of sugar, but a decided deficiency in fat and soluble albumen, and a slight deficiency in casein. We have therefore endeavoured successfully to produce two complete Foods which are, physiologically, practically the same as the mother's milk. These are

The "Allenburys" Milk Food, No. 1.

which is prepared in the form of a powder, is made from fresh cow's milk, from which, after the proximate composition has been ascertained, the excess of casein is removed, and the deficiency in fat, soluble albumen, and milk sugar corrected. The method of preparation renders this food sterile, and boiled water alone is required in preparing it for use.

Infants reared by hand should be brought up on this food until they are three months old.

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The "Allenburys" Milk Food, No. 2.

This food, to meet the increasing requirements of the digestive apparatus, contains, besides the constituents of "First Food," maltose, with a small proportion of dextrine, together with soluble phosphates derived from whole meal. There is, however, no unconverted starch left in the food which at this age the infant would be unable to digest.

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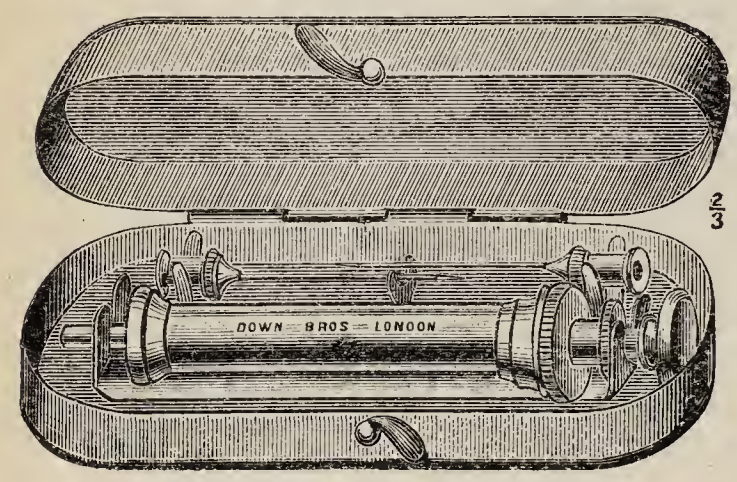

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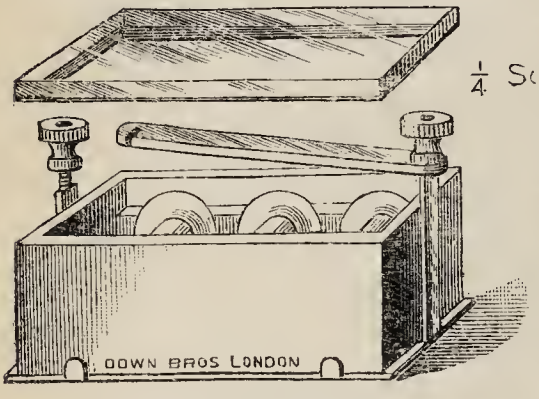

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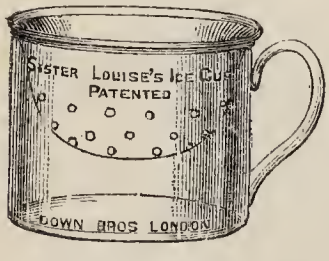

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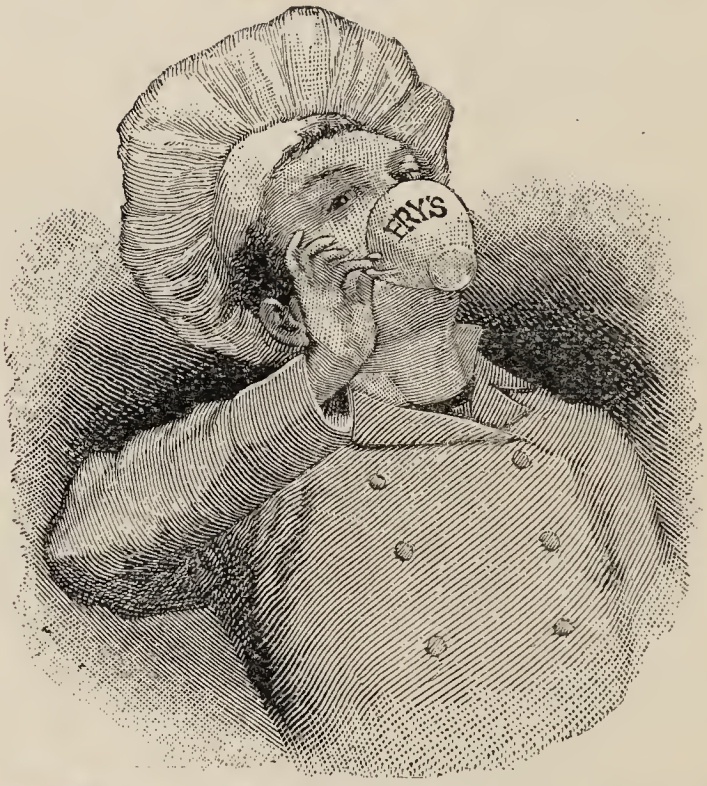

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Synopsis.

An Abstract of the most Practical Articles in this Volume, with other Short Articles from the Medical Journals, showing the most important indications of Treatment, published by different writers during the half year.

Arranged Alphabetically.

GENERAL MEDICINE AND THERAPEUTICS.

ACROMEGALY TREATED BY THYROID AND PITUITARY GLAND EXTRACTS SIMULTANEOUSLY.

[The details of the two cases are omitted here.] In these two cases amelioration of one symptom, and that an urgent one—headache—followed the combined administration of thyroid and pituitary gland extracts, but the structural changes remained unaltered. The results are too scanty to establish any reliable conclusion as to the value of the treatment, but they justify a more extended trial, and it is with the object, if possible, of inducing others who have cases of acromegaly under their care to try this form of treatment, that this note is published. One point that specially requires investigation is, whether any good effect that may result from the administration of the combined extracts is solely due to the contained thyroid extract, or whether the two combined extracts have more effect than the administration of thyroid alone. Pituitary extract has been generally unsuccessful in the treatment of acromegaly, while the treatment with thyroid extract has given variable results. Benson, Bruns, and Bramwell recorded improvement, Bramwell and Ransom report no effect, and Murray mentions temporary improvement which disappeared while the treatment was continued. Under these circumstances, it has been thought that any beneficial effects it may have are of a general nature, and not due to any specific action on the morbid processes at work in acromegaly. But since thyroid extract has been found to relieve the headache of acromegaly, it is possible that the apparent success of the

administration of the combined extracts was in reality due to the thyroid extract, and not to the combination. In this connection it would be interesting to ascertain what is the effect of thyroid extract on headache other than that of acromegaly; from the fact that it lowers external pressure it might be expected to relieve some forms of headache. In the report of the Clinical Society of London, on myxœdema, occipital headache was present in one-fifth of the cases. On the other hand, excessive doses of the extract give rise, among other symptoms, to headache. At the present time the relation of change in the pituitary gland to acromegaly cannot be considered as entirely understood or definitely settled; it is true that the change in the gland is generally regarded as primary. (From Dr. H. D. Rolleston's paper in The Lancet, December 4, 1897.)

ANTITOXIN TREATMENT.

To sum up:—(1) Antitoxin, to be of value, must be used as early as possible—before tissue damage has occurred—and in a sufficient amount. (2) As antitoxin is not germicidal, it is well to employ local antiseptic treatment, where applicable, to the throat in diphtheria, to the wound in traumatic tetanus, and to the uterus in puerperal fever. (3) Antitoxins are specific, and may fail in mixed infections, &c. (From Dr. Hewlett's paper in Treatment, 1897, p. 174.)

BROMIDES.—Untoward Effects Produced by.

Dr. H. A. Hare (*Therap. Gaz.*, Detroit, June, 1897) calls attention to certain unusual effects produced by the administration of bromides, other than the usual symptoms known as bromism. These have been frequently noticed by others, and have a practical bearing on the advisability of administering the drug continuously in certain cases. Weir Mitchell has reported cases in which great irritability of temper, melancholia, moroseness, and homicidal or suicidal tendencies were developed. These symptoms disappeared when the drug was stopped. Hughes describes a case of *petit mal*, which developed kleptomania whenever bromide was given, and Rockwell has recorded an instance in which an epileptic female became irritable and suspicious under their use. Many somewhat similar cases are to be found scattered throughout the literature of the subject. Mental aberration of a mild kind has often been noticed, recovery taking place when the bromide was stopped or replaced by some other drug. Bannister has also reported a condition of pleasurable intoxication, with exalted ideas and sometimes furious mania, which came on in an ordinarily well-behaved epileptic, whenever he got bromide of potassium. Several similar cases illustrate the clinical fact

that the arrest of epileptic attacks by full doses of bromides, produces on rare occasions evidences of nervous excitation in other forms. In patients receiving large doses of bromide, paresis of the lower extremities, tremors, coldness, anorexia, and diarrhœa, loss of intelligence and memory, and sometimes delusions, hallucinations, and intense headache, have been observed. Sexual excitement has also been observed, contrary to the usual experience. With the view of getting some idea of the frequency of these various unusual effects, Hare sent out circulars to a number of physicians in charge of asylums. The answers received amply confirm the existence of such untoward effects. The different replies are too long and detailed to quote, but they are unanimous in affirming that delusions and maniacal excitement are occasionally caused by bromides, and in certain patients habitually so. Symptoms of greatly increased nervous depression are very common, and necessitate the withholding of the drug. Hare thinks that sodium bromide ought to be habitually prescribed rather than potassium bromide, owing to the depressing effect of potassium salts on the heart and neuro-muscular system generally. (Dr. Stockman's abstract in the Edinburgh Medical Journal, August, 1897.)

CARBOLIC ACID POISONING.

Dr. L. L. Solomon relates a case in a woman, aged 33, who took 3 ozs. of carbolic acid. Death occurred $1\frac{3}{4}$ hours later. He makes the following observations:—Regarding the minimum lethal dose of carbolic acid, there seems to be no consensus of opinion to-day. As little as six minims has caused very alarming symptoms, while a drachm to half an ounce are usually considered fatal. Much depends upon the state of the stomach —whether full or empty—and very much, too, upon the concentration or dilution of the acid. If it is very dilute, death may, nevertheless, finally result from the effect on the lungs and kidneys, where the poison is eliminated. Destruction of the blood also plays a prominent part in these cases. If the acid is highly concentrated, death sometimes results as in prussic acid poisoning, viz., at once, by paralysis of the vasomotor centres in the medulla, with cardiac depression and suspension of respiration. (New York Medical Journal, November 6, 1897.)

CHLORAL IN DISEASES OF CHILDREN.

Chloral hydrate belongs to a class of drugs the dangers of which are so emphasised that their good qualities are apt to be lost sight of. I do not advocate its indiscriminate use, but when it is employed suitably, and in doses sufficient to produce a definite effect, it may prove of value. It is essential that the drug be absolutely pure, that the patient should be kept in bed, and

carefully watched when full doses are employed; with these precautions no bad effects, either immediate or remote, will follow. The appetite is not interfered with, the intestinal functions are not disordered, symptoms of cardiac failure do not occur, and the drowsiness and lassitude produced by full doses pass off when the use of the drug is stopped. It may be administered alone or with tincture of digitalis when cardiac complications exist, and in some cases it may be advantageously combined with potassium or ammonium bromide. In three cases I employed chloral hydrate with good results. The first was that of a girl, eight years old, subject to epileptic attacks, which were controlled by chloral hydrate in combination with potassium bromide. The second was one of progressive chorea in a girl of ten years; the cardiac action was rapid and somewhat weak, and a systolic murmur of mitral origin was present. The third was one of bronchitis and asthma in a child over three years of age, and it illustrates the effect of chloral in the paroxysmal dyspnœa of asthma. These affections resemble each other in being associated with an unstable condition of the nervous system, which manifests itself by some disturbance of function. This disturbance by repetition leads to the production of a vicious habit which it is difficult to cure. It is probable that no single drug is suited to all cases of this description, but in my experience chloral is serviceable in some cases. The best method of administration is to give at first in full doses so as to break the habit as quickly as possible, and then in doses sufficiently large to keep the evil tendency in check.—Sutherland, in Treatment. (From Medical Age, July 10, 1897.)

CHLORATE OF POTASSIUM.—Dangers of.

[The following is included here as some cases of poisoning by this drug have lately been reported.—E. F. T.] A notion is prevalent among the public that chlorate of potash is a remedy which may safely be indulged in to an unlimited extent, but it is high time that this dangerous error should be exposed. Therapeutists are well aware that even in comparatively moderate doses chlorate of potash is a very active drug, producing a marked effect on the blood, which it turns brown, and leading, in large doses, to cardiac paralysis, albuminuria, and death. Instances of this are not very rare, and, only a few days ago, an inquest was held at Morpeth on the body of a young man, who had diligently sucked pellets of the drug, with the object of preparing to sing at a Wesleyan chapel. So diligently had he applied himself to the improvement of his voice, that he absorbed altogether some two-thirds of an ounce of the drug, with the result of causing death from syncope—a pseudonym for cardiac paralysis. We trust that this

regrettable mishap will serve as a warning to those who prescribe chlorate of potash tablets or lozenges for their own use, seeing that even in what are considered safe doses it often gives rise to great mental and physical depression, insomnia, and various other disturbances of the human economy. (A leaderette in the Medical Press and Circular, July 28, 1897.)

CHLOROSIS.—The Treatment of.

Romberg (*Berl. klin. Woch.*, July 5, 1897) concludes his papers on chlorosis by remarks upon treatment. He observes that every-day observation shows that iron cures chlorosis. He has seen five cases in which other treatment, continued from one-and-a-half to four weeks, produced no improvement. The author has treated cases with "carniferrin," saccharated carbonate of iron, and also with ferratin. Carniferrin contains 30 per cent. of iron in as firm combination as in hæmoglobin. Romberg contends that we are no longer able to speak of absorbable and non-absorbable preparations of iron. The iron leaves the intestine in a micro-chemical form, but it remains to be shown how it is converted into the iron of the blood. The mode of absorption of the various preparations of iron is the same, but it is possible that one preparation may be absorbed in larger quantities than another. It was not proved that the more stable combination of iron in carniferrin was better absorbed than the looser one in the saccharated carbonate of iron. It is only necessary to give small doses of carniferrin. This agent was given in doses of 0·6 gr., the carbonate of iron in 1·8 g., and ferratin in 3-g. doses. The results obtained were much the same. Fifty cases treated with carniferrin showed a percentage of 64 cured, the average duration of treatment being 30·3 days. About 64 per cent. of 47 cases treated with the carbonate recovered in an average of 22 days. Six out of twelve cases treated with ferratin were cured in an average of 27·1 days. If all the cases are added together, the average duration of treatment was 26·5 days, and the average increase of hæmoglobin in 10 days was 9·9 per cent., and of the red cells 430,645. Leaving out the cases treated by ferratin as too small in number, the agreement between the results obtained by the two other preparations was striking. The author has never observed any gastric disturbance produced by the treatment. The agents were given in powder after meals. One preparation did not prevent relapse any more than another. Those treated as out-patients did not recover as rapidly as those in the hospital. The severe cases improve much more quickly than the slight ones. The hæmoglobin steadily increased in a regular fashion, whereas the behaviour of the red cells was more variable. No rule can be laid down in regard to the red cells. (British Medical Journal Epitome, July 24, 1897.)

CREOSOTE IN CHILDREN'S DISEASES.

Hock has had brilliant results from the use of creosote in treatment of children, not only in phthisis, but in the sequelæ of whooping cough, and the catarrh which so often follows measles. These two conditions, as is well known, furnish a favourable opportunity for tuberculous infection. The usual treatment with expectorants is too often without result. Most diseases of childhood are accompanied by disturbances of digestion, and these are the symptoms which are first relieved by the use of creasote. The appetite improves, the abdominal pain disappears, and weight increases. Later, the pulmonary condition improves. It goes without saying that the creosote must be given in such a manner as not to upset the stomach, and large doses in a concentrated form are therefore to be avoided, the drug being given in small doses with meals. Pills, though cheap, are objectionable, especially for very young children. Hock tried in a number of instances to administer fluid creosote with tincture of gentian, but in almost every case the stomach refused the medicine after a few days. He was most successful with a 1 to 2 per cent. solution of creosote in cod-liver oil. The dose of this mixture is from one-half a drachm to one-half an ounce three times daily, according to the age of the patient.—*Wien. med. Blätter*, and *Archives of Pediatrics*, Ap., 1897, p. 315. (Dublin Journal of Medical Sciences, August, 1897.)

DERMATOL AND ITS INTERNAL ADMINISTRATION.

Dermatol, says *The Lancet* for August 14, is, as is now well known, a basic oxide of bismuth, and has been employed with considerable success as a substitute for iodoform in the treatment of wounds, having both the desiccating power of bismuth and the hæmostatic and astringent characteristics of gallic acid. Its employment as a drug for internal administration up to the present time, has not been at all general, though Colasanti and Dutto have prescribed it with advantage in various cases of intestinal catarrh, and Werther has found it useful in chronic intestinal catarrh. Dr. Perlmutter has recently published a paper in the *Münchener medicinische Wochenschrift* on its employment in gastric ulcer and diarrhœa, his observations being made on an extended series of cases, and being inspired by Professor Moritz, who recommended it to his notice. In diarrhœa, in phthisical subjects, and in acute and chronic enteritis he found it most valuable, all cases of this kind benefiting by its use, and the result being by no means only of a transient character. The drug was given in doses of from eight to thirty grains, in water, twice a day. It is not

poisonous, and produces no by-effects except a tendency to constipation, which can be readily combated by means of glycerine enemata. In gastric ulcer, too, it was very useful, especially in acute cases where patients could be kept at rest and properly dieted, and made to lie on the affected side after taking the dermatol, so that it might come into contact with the lesion itself. Of course, when bismuth is being given, the stools will be dark, and care must be taken not to mistake them for those coloured by blood. (New York Medical Journal, September 18, 1897.)

DIABETES MELLITUS AND DIABETES INSIPIDUS.

Senator (*Deut. med. Woch.*, June 10, 1897) states that experiments on animals have shown that there is a close relation between polyuria and polyuria with glycosuria. Clinically, also, there is a close relation between certain cases of diabetes mellitus and diabetes insipidus. With regard to the etiology, it is well known that both forms of diabetes are often connected with altered conditions of the nervous system. In the etiology of diabetes insipidus, affections of the nervous system play by far the most important part. Of course the disease is not always due to gross pathological changes in the nervous system, but frequently only to functional disturbances, neuroses, pyschoses, and neuropathic conditions, acquired or hereditary. The same is true also of diabetes mellitus. Frequently, in the same family, besides diabetes mellitus or diabetes insipidus, epilepsy, psychoses, hysteria, and other diseases occur. Another point indicating the relation between the two diseases, is the occasional occurrence of diabetes mellitus and diabetes insipidus in near blood relations. The author records a case of diabetes insipidus in which the mother had died of diabetes mellitus. But the best proof of the relationship of the two diseases is the transition of one disease into the other, or the alternating appearance of the diseases in the same patient. The transition of diabetes mellitus into diabetes insipidus is the more common. This is a favourable change, since sometimes complete recovery occurs. First the sugar disappears from the urine, and then, in course of time, the quantity of urine becomes normal. The author records two cases illustrating the transition of diabetes mellitus into diabetes insipidus, and refers to a number of others reported in medical literature. He also records two cases of diabetes mellitus in which the sugar disappeared and was replaced by albumen; then the albuminuria disappeared, and polyuria remained. Finally the patients recovered completely. Notes of another case are given in which symptoms of diabetes insipidus were present; finally glycosuria occurred, and the patient became wasted and died. The occasional alternating occurrence of diabetes mellitus and diabetes insipidus in the

same patient is then referred to, and a case of C. Westphal is quoted. (Dr. Williamson's abstract in the Medical Chronicle, September, 1897.)

DIABETES, URANIUM NITRATE IN.

Dr. Ebenezer Duncan says that Dr. West's paper, read before the Medical Association in 1895, has revived interest in this form of treatment. Dr. Duncan believes that the cause of partial failure in the use of this remedy in diabetes is due largely to the insufficiency of the doses commonly administered. To obtain the best results, 12 to 15 grains of the drug must be taken three times a day, preferably after meals. The possibility of exciting gastritis and nephritis, however, must be guarded against. He has found 15-grain doses quite safe. Since April last he has been testing the remedy carefully at the Glasgow Royal Infirmary, and in only one out of six cases—an advanced and hopeless one—had he found it disappointing. These six cases included persons varying in age from early manhood to old age. He has found, also, that the withdrawal of the drug at too early a stage has been immediately followed by a return of all the diabetic conditions. With the one exception noted, all the patients under treatment are at the present time free from the presence of any sugar whatever in the urine, and a corresponding improvement in the general health has followed. He believes the cause of the diminution and elimination of sugar from the urine by means of this agent, is due to its stimulating effect on the sugar-consuming cells, and not, as West claimed, dependent upon its power of consuming and digesting large quantities of starch. (Medical News, September 11, 1897.)

DIABETIC COMA.

Coma is probably the most formidable complication of diabetes mellitus, and when the symptoms of this condition are well established, it is doubtful whether recovery ever occurs. Lépine (*Lyon Medical*, 1897) records three cases of diabetic coma treated by transfusion, with one remarkable success. Transfusion has been largely used in this country and abroad in the treatment of this condition, and although this method is of service, yet actual recovery has rarely been seen to follow its use. The more usual result is for the transfusion to be followed by a temporary recovery of consciousness, but the patient soon relapses into unconsciousness, and rapidly dies. In two of Lépine's cases the transfusion only resulted in temporary improvement, but in the third case, where this treatment was used before the patient was actually comatose, the results were much more striking, and the patient

not only recovered, but a month later was in a greatly improved condition. Lépine draws attention to the value of dyspnœa as a symptom indicative of the onset of coma, and in his successful case the patient was transfused as soon as the dyspnœa was marked and the quantity of urine and of sugar had undergone a marked diminution. This diminution in the amount of urine and of sugar is, as is well known, not necessarily a sign of improvement in diabetes; it is very often seen when coma is imminent. The transfusion had the following effects on the composition of the urine:—The quantity of urine was increased by about one litre (two litres of fluid having been transfused), but the amounts of acetone, diacetic acid, and oxybutyric acid in the urine were trebled; the quantity of sugar was not greatly increased, and the ratio between the amounts of sugar and of urea excreted remained unaltered. Thus the main result was a great increase in the excretion of the toxic substances that are held to be responsible for producing diabetic coma. Inasmuch as bioxybutyric acid is probably the substance mainly concerned in producing coma, an alkaline transfusion fluid is the most suitable to use, and the fluid Lépine used in his successful case contained 7 grms. of sodium chloride and 10 grms. of sodium bicarbonate to the litre of water, and 2 litres were transfused intravenously. This large bulk of fluid cannot be injected subcutaneously, owing, amongst other things, to the severe pain caused, and, further, the rate of absorption is not sufficiently rapid for the full beneficial effects to be produced. It is for the same reason useless to administer bicarbonate of soda by the mouth. (Dr. Rose Bradford's summary in the Practitioner, September, 1897.)

DIPHTHERIA BACILLUS, THE.

Dr. Trevelyan read a paper on this subject before the Leeds annual meeting of the Sanitary Institute, 1897. He first drew attention to the presence of the diphtheria bacillus in some cases of minor sore throat, or unrecognised diphtheria, and also to the persistence of the bacillus long after the attack of diphtheria was over, as in both these cases disregard of well-established facts might lead to the supposition that the disease was not conveyed directly from another person, but was obtained from some other source. Bacteriological examination alone enabled the observer to recognise the nature of such minor sore throats, and to fix, to a large extent, the time when an individual convalescent from diphtheria may no longer be a source of infection to others. After relating the well-known laboratory facts about the diphtheria bacillus, Dr. Trevelyan discussed, in the light of recent investigations, the occurrence of the diphtheria bacillus outside the human body in the air, dust, on

clothes, in water, sewage, articles of diet (especially milk), and in certain membranous affections of mucous membranes in animals. The question of milk diphtheria was touched upon in regard to (1) milk being a good cultivation medium for the diphtheria bacillus, and (2) the possibility of cows suffering from the disease itself. Finally, the probable propagation of diphtheria through the medium of domestic animals, and especially the cat, was discussed. (Journal of the Sanitary Institute.)

DIPHTHERIA BACILLUS, STAIN FOR.

Neisser (*Zeitschr. f. Hyg.*, xxiv., 1897, No. 3, p. 443) recommends the following as a differential stain for the diphtheria bacillus:—(*a*) 1 gramme of methylene blue (Grübler's) is dissolved in 20 c.c. of 96 per cent. alcohol, which is then mixed with 950 c.c. of distilled water, and 50 c.c. of glacial acetic acid. (*b*) 2 grammes of vesuvin are dissolved in 1 litre of boiling distilled water and filtered. The cover glass preparations are stained in *a* for $\frac{1}{3}$ seconds, rinsed in water, and stained in *b* for $\frac{3}{5}$ seconds, washed in water, dried, and mounted. Stained in this manner the bacilli are brown, and contain two, or rarely three, but never more, blue corpuscles. The corpuscles are oval, not round, in shape, and their diameter appears greater than that of the bacilli in which they are situated. (Treatment, August 26, 1897.)

DIPHTHERIA, PROLONGED.

Jessen (*Centralbl. f. inn. Med.*, May 15, 1897) refers to the rare cases in which clinical manifestations of the diphtheritic process in the upper air passages persist for a long time. There are but few reported cases of this chronic diphtheria. The author records the following case in a girl, aged 19, who first fell ill with a facial erysipelas. This soon got well, but a few days later an ulcerated patch appeared on the right side of the palate. The glands were enlarged, and the temperature was 39·5° C. Virulent diphtheria bacilli were found in the exudation. In the further progress of the case exudation appeared on the posterior pharyngeal wall, and in the naso-pharynx and right nostril, but there was no fever and no albuminuria. Four weeks after the onset there was a definite paresis of the right half of the soft palate. The exudation varied its position, but as time went on its intensity diminished. Virulent diphtheria bacilli were constantly found in the exudation. An injection of 1,500 units of diphtheria serum had no effect on the local lesion, and the same was true of local treatment with all the ordinary applications. Lactic acid destroyed the exudation rapidly, but it formed again. Four

months after the onset there was an infiltration of the mucous membrane where the exudation had been, and there were still several white patches in the pharynx not easily detached. The exudation was fibrino-purulent in character, and contained diphtheria bacilli. It is interesting to note that notwithstanding the presence during four months of a local lesion containing virulent diphtheria bacilli, there were practically no general symptoms. Some five months after the onset the exudation disappeared, and the infiltration of the mucous membrane began to diminish. (British Medical Journal Epitome, July 17, 1897.)

DIPHTHERIA SERUM.

Prof. Monti now records 249 cases of children treated with the serum, of whom 207, or 83 per cent., recovered, and 42, or 47 per cent., died. He looks upon this reduced mortality as a great advance in the treatment of diphtheria, as in former years 25 per cent. was looked upon as very favourable when no epidemic was present, but which would rise to 40 when any local wave of infection occurred. General statistics he viewed with disfavour, and argued that the pathological and bacteriological examination should be the foundation of estimating the value of serum treatment. He divides the clinical aspect of diphtheria into three forms:—(1) The fibrinous, where the diphtheria products are largely confined to the mucous membrane, from which the poisonous toxine of the bacilli is slowly taken up by the underlying tissues. (2) The mixed form or phlegmonous, or so-called diphtheritic croup, where the fibrinous exudation involves the deeper fibrous tissue as well as the mucous membrane, in which a virulent form of Löffler's bacilli is found. (3) The septic or gangrenous form, where the pseudo-membrane sinks deep into the tissue, followed by necrosis, in which Löffler's bacillus, with other septic and saprophytic microbes, are found. Of the 249 treated, 140 were fibrinous, 88 phlegmonous, and 21 septic. Of the first group 140, 49 were slight, 36 moderate, and 55 severe, of whom 37 per cent. died. In the second group of 55, where the phenomena of laryngo-stenosis was prominent, 13 cases were submitted to surgical treatment, eight to intubation, of whom seven recovered and one died. Tracheotomy was unsuccessful. The sequelæ occurred in 23 cases, in 13 paralysis, and in 10 albuminuria. In his review he expresses pleasure with the result of the serum treatment, combined with intubation, where the mortality was 12 per cent., while in former years it was 33 per cent. When the serum is administered in sufficient quantity, there is a constant fall in the temperature with general improvement, rapid separation of the membrane, and marked reduction in the duration of illness. (Medical Press and Circular, Sept. 29, 1897.)

DIPHTHERIA, SERUM TREATMENT OF.

Monti, in a lecture, said that out of the 88 treated in the mixed phlegmonous form, 12 were slight, 45 moderate, and 31 severe, which gave 19 per cent. of mortality. He regretted that this class was not so yielding to the serum treatment as the fibrinous form, although it reduced his former death-rate, which ranged from 25 to 40 per cent. Ten of this class were treated surgically by intubation and tracheotomy. Those treated with the serum were differently affected, as in the fibrinous form. Out of the 88 cases treated, 13 had paralysis, 12 had albuminuria, 22 had both paralysis and albuminuria at the same time, three suffered from gland suppuration, and two from septic pneumonia. Everyone knows that early treatment in this class of cases is the principal point of success. After two or three days' absorption of the toxine and streptococci, the influence of the serum is greatly weakened, and the death-rate is necessarily high. In the third, or septic class, 21 cases were treated, and 76 per cent. of deaths. The same remark applies to these cases that early application is the *sine quâ non*, as the septic condition, when once established, leaves little room for hope. He was quite convinced that statistics favoured the serum treatment, although the gangrenous form required careful attention. As to the prophylactic worth of the serum, he would not venture on any confident opinion. He had injected 500 or 600 antitoxins without any bad effects, or any symptom of diphtheria. It is acknowledged by all that this treatment induces exanthems, measle rashes, purpura, urticaria, &c., with albuminuria and paralysis. From the aseptic improvement in the serum, these accidents are now greatly reduced. He related the case of a horse, whose serum produced all the above symptoms, after 10 ccm. were injected, which was due, he believed, to the active principle contained in the albumen of the serum, which acted as a poison. (The Medical Press and Circular, October 6, 1897.)

Diphtheria, Serum Treatment of.

Dr. E. P. Manby read a paper, before the Liverpool Medico-Chirurgical Society, on "Some Clinical and Statistical Evidence of the Value of Antitoxin in the Treatment of Diphtheria." He had tabulated about 10,000 cases which had been treated at the Metropolitan Asylums Board Hospitals. He drew attention to the early experiments of Bebring and Wernicke with antitoxins, and quoted from Roux's paper on the antitoxic treatment of diphtheria at the Budapest Congress. He then mentioned the introduction of the treatment into the metropolitan hospitals, and drew attention to the death-rate before and after the introduction of the antitoxin. He then

discussed the question of dosage, and drew attention to the fact that the amount of the antitoxin to be used must be gauged by the severity of the disease, and not by the size or age of the patient. He then mentioned how the ordinary course of the disease was modified, and how the sufferings were mitigated, by the antitoxin injections. He also mentioned the dangers of the injections themselves. The statistical examination of the subject was highly favourable to the treatment. (The Lancet, October 30, 1897.)

DIPHTHERIA SERUM RASHES.

[The details of the author's two illustrative cases are omitted here.] Both these cases, like most others, bear out the benefit of the serum treatment of diphtheria. The most interesting element which is common to the two cases is the development of a peculiar "exaggerated measles" rash (about the same interval after the injection of serum), intensely itchy, and in both cases on the fronts of both legs only. The only immediate cause for the development of this rash was the use of the antidiphtheria serum. A possible remote cause is a syphilitic taint in both these patients, and there is much in the character of the rash in favour of this: its dusky-red colour, its symmetrical distribution, its tendency to form circles. If this be so, then is serum injection going to light up latent syphilis, and will it diagnose a syphilitic dyscrasia? Whatever may be the remote cause of this, so much is true that after the use of antidiphtheria serum it is possible to have a localised measly rash. The appearance of a blush at the seat of injection, and the development of a scarlatinal rash more or less over the whole body, have been recorded, but what other varieties of eruption are possible after the use of antitoxin I do not know. (From Dr. Newell's paper in the British Medical Journal, September 18, 1897.)

DISINFECTION OF CLOTHING BY FORMALIN.

Of late several useful lamps have been contrived for the generation of the powerful disinfectant formalin, which has proved to be a most formidable adversary of dangerous microbes. A most valuable application of the formalin-lamp is the disinfection of the clothing of physicians and others who have attended contagious diseases. Hang such clothing in a tight closet or box, and place the lamp beneath them with nine or more tablets in the upper brass cup, and let the fumigation go on for some hours—adding more tablets in some cases. The lamp may also be used under a box, as before described, for disinfecting carpets. (The Therapist, October 15, 1897.)

FEVER.

(1) Almost anything may cause a rise of temperature in a patient. Mental emotion alone may produce a temperature of 104°—105° for a time. (2) Convulsions in children are often sufficient to cause high temperature,—a rise of 9°—10° even,—and this hyperpyrexia may prove fatal unless counteracted by the application of cold water. Such a condition may be seen at the onset of almost any specific infective disease, such as varicella. (3) Hemorrhage may be attended by a rise of temperature quite apart from the disease causing the loss of blood. This is well seen in some cases of hæmoptysis. The rise of temperature in cerebral hemorrhage is not analogous, however. (4) Frequently a convalescent patient, whose temperature will not settle down, gets a steady normal temperature on being allowed to get up. With patients convalescent from rheumatic fever, this is especially noticed. (From Dr. Gee's Clinical Aphorisms, collected by Mr. T. J. Horder, in the St. Bartholomew's Hospital Reports, vol. xxxii., 1897.)

GOITRE, EXOPHTHALMIC.

M. Abadie, speaking on this subject at the Académie de Médecine, said that in order to explain the genesis of Basedow's disease, three principal theories obtained the favour of clinicians; the hematic, the nervous, and the thyreogene theory. This latter was the latest, and while it seemed to be the most seductive, it is that which had the most unfortunate consequences in a therapeutic point of view. He wished to prove that all interventions on the thyroid body were uselessly dangerous, and did not affect the true nature of the affection. In a communication made at the last Surgical Congress, he refuted the theory which considers exophthalmic goitre as having its point of departure in the hypertrophy of the thyroid gland. To this theory he substituted another, that of permanent excitability of the vaso-dilators of the cervical sympathetic, and concluded by saying that all surgical interference with the gland should be renounced in favour of section of the sympathetic between the middle and superior cervical ganglions. Since then, facts had confirmed the theory he sustained. In all cases of exophthalmic goitre, when the section of the sympathetic nerve had been practised, the exophthalmia and the goitre had receded. If the exophthalmia had sometimes a tendency to return, the reason was that all the filaments of the nerve had not been severed. On the other hand, the surgeons who had practised partial thyroidectomy were frequently astonished at the formidable hemorrhage provoked by the active vaso-dilatation of the arteries, which, in spite of their section, maintained their patency. In exophthalmic goitre, hypertrophy

of the thyroid was not primary; it was consecutive to the vaso-dilatation of the thyroid arteries, which furnished to the gland an excessive nourishment. L. exophthalmia was due to the vaso-dilatation of the retro-bulbar vessels. In severing the cervical sympathetic between the superior and middle ganglion, the dilatation disappears in all these arteries, and the symptoms recede considerably. In concluding, the speaker said that in future surgeons should not operate on the thyroid gland, save for some tumour that might be independent of the gland itself. (Medical Press and Circular, July 14, 1897.)

HÆMOPHILIA, CHLORIDE OF CALCIUM IN.

Physiologists have known for some time that lime salts play an essential part in the coagulation of the blood. This suggested to Dr. A. E. Wright the possibility of artificially increasing the power of coagulation. He made some valuable researches, and showed that the administration of chloride of calcium caused a considerable increase. He found that in hæmophilia the coagulation time could be reduced about one-half. He therefore suggested the use of this salt in the treatment of hæmophilia and other diseases attended with recurrent hemorrhages. His conclusions have been fully confirmed by the results, especially in the case of hæmophilia, where they are even brilliant. But the value of the treatment appears still to be but little recognised. The following case, published by Dr. Clifford Perry, and abstracted in a recent number of the *Revue des Sciences Médicales*, is very definite evidence. Severe hemorrhage followed incision of a dental abscess in a case of hæmophilia. Only after four hours' energetic work, and packing the whole space between the alveolar process and the cheek with gauze saturated with strong solution of perchloride of iron, did the hemorrhage cease. Later epistaxis and recurrence of hemorrhage from the wound took place, which ceased when the patient was on the verge of collapse. After six hours, alarming hemorrhage again occurred, which all ordinary means failed to stop. Chloride of calcium was given in doses of 1·30 gramme every four hours. In a few hours the effect was marked; a firm clot formed, and the hemorrhage ceased. (The Lancet, October 23, 1897.)

HELOUAN IN EGYPT.

It is evident that by residence in such a warm, dry, equable climate, with air unusually free from dust and germs, with abundance of sunshine, and practical immunity from rain, mist, or snow, with healthy mental occupation, and surrounded by the resources of civilisation, sufferers from early chest trouble, enlarged glands, scrofula, renal disease, and albuminuria, are

likely to derive important benefit. Such conditions will obviously be very efficacious also to patients convalescent from severe illness, and to those who are anæmic and debilitated, or in dubious health. Moreover, such a decided change as Helouan offers in physical and mental surroundings, is of the greatest help in cases of functional diseases of the nervous system, especially if previously associated with overwork or mental strain. The thermal waters (sulphur, saline, and chalybeate), may be used either internally or externally or combined. Judiciously employed, they certainly exert an eliminative action, and are of distinct benefit in cases of gout, lithæmia, and allied conditions. They are useful also in cases of bronchial, laryngeal, and pharyngeal catarrhs, stasis of the portal system, and abdominal plethora, whilst sufferers from dyspepsia, engorgement of the liver and pelvic organs are often indirectly benefited, especially if their troubles are associated with a gouty or rheumatic diathesis. Patients with rheumatoid arthritis distinctly improve, and, as Dr. Bannatyne states, Egypt is *par excellence* the place for sufferers from that disease to winter in. Conditions such as sciatica, rheumatism, stiff joints, or arthritis, whether affecting one joint or more widely diffused, undergo most marked improvement at Helouan, and in these cases it is difficult to apportion the amount of advantage derived from the waters and the peculiar, warm, dry, desert air. Also, cases of chronic skin disease and special cases of debility are frequently much improved or cured by the use of the waters. (From Dr. Page May's paper in The Lancet, October 9, 1897.)

HEMORRHAGE, MEDICAL.

In conclusion, I would make four propositions for discussion:—(1) That most cases of medical hemorrhage cease spontaneously, and are essentially not dangerous to life from loss of blood. (2) That active treatment by ice-bags and ergot frequently defeats its own purpose; if the bleeding ceases, it does so in spite of treatment. (3) That where experience of morbid anatomy or the profuseness of the blood loss makes an arterial source certain, ergot is distinctly contraindicated. (4) That complete rest, opium, and iodide of potassium are our most powerful and most trustworthy agents for the emergency, except in certain special cases—*e.g.*, from stomach—where additional treatment by astringents should be applied. (From Dr. F. J. Smith's paper in The Lancet, November 20, 1897.)

HYPODERMIC INJECTION.

[The following is taken from the *Medical Age*, 1897, p. 601:] We therefore recommend the following method:—Pick up the skin and fascia of the back of the upper arm, and with it

either a portion of the triceps or the deltoid muscle, according to the height at which the injection is to be made, and hold it firmly, with the skin moderately tense. Rest the ulnar side of the hand holding the syringe against a convenient part of the patient's arm, with the needle resting upon or close to the skin, and perpendicular to it. With a sudden motion carry it very quickly through the skin for half an inch or more so as to reach the underlying muscle or fat, according as the patient is thin or fat. The fluid should be injected so slowly as not to cause discomfort. Then the needle is withdrawn with a very quick movement, and the finger or thumb immediately placed over its orifice of exit, and used for about a dozen deep massage movements. After this the pressure is removed, and the operation is completed. Injections so made are only slightly perceptible, and never have any bad after-effects. Seventeen years' use of this method without a single abscess or serious soreness argues much in its favour.—*Atlantic Medical Weekly.* (Still better is the method whereby the heel of the piston is held in the palm of the hand, the fingers grasping the barrel and needle, and the introduction of the latter and the fluid made simultaneously. A little practise will secure this "knack." But it is all nonsense about the necessity of entering the muscle or a solid fat layer; the subcutaneous cellular tissue is the proper place for the injection.—Editor of *Medical Age.)*

INFLUENZA.—Treatment of.

In the "cardiac" form of influenza, where we have the constant menace of heart failure, and in the "respiratory" variety, where there is a tendency to catarrhal pneumonia, and capillary bronchitis, we strongly advise in the first, the inhalation of pure oxygen properly diluted with a gas of lighter specific gravity, in order to insure its absorption by the pulmonary capillaries; because the first and most assured action of oxygen is upon the heart, second on the arteries, dilating them all over the body, and thus distributing the circulation; and third, upon the tissues, restoring normal molecular action. In the respiratory form of the disease, we would use the hot water bag, over the dorsal vertebræ, combined with the inhalation of oxygen, and by these measures we feel assured that this form of grippe may be speedily relieved and cured. Minute doses of antipyrine, aconite, and pilocarpine may be used with benefit in the typhoid and respiratory forms of the disease, to lower the pulse and temperature, and induce sweating, at the same time as the hot water bag is applied; but we would not recommend more than half the usual doses, believing that they will be fully as effectual when aided by the heat over the spine. The use of oxygen, properly combined and prepared for therapeutical purposes, in

laboratories established for that purpose, is absolutely essential, in order to obtain successful and the best results from its administration. That prepared by calcium light manufacturers for commercial purposes, is filled with chlorine, and other deleterious gases which will injure the patient; while pure oxygen alone is too dense in its specific gravity to be absorbed by the capillaries. Therefore the purity of the gas, and its dilution with a gas of a lighter specific gravity, are to be insisted upon. The gas which we believe to be most efficient for the purpose, is nitrous monoxide, and the formula which is now in use by the London Oxygen Hospital we consider the best. It is composed of two parts of pure oxygen, one of nitrous monoxide, and 1 per cent. of ozone to keep it fresh. (From Dr. Kinnear's paper in the Montreal Medical Journal, November, 1897.)

LEPROSY.

It is obvious that there are numerous channels through which the bacilli may be eliminated, and that the transmission may take place by mediate or more or less immediate contact. That infection is not thus more commonly conveyed than it actually is, may be due to the fact that the bacteria thrown off through the channels indicated may be deficient in virulence, or that certain peculiarities must first be complied with on the part of the exposed individual. Under any circumstances it may be safely maintained that leprosy is a specific, infectious disease, capable of transmission by more or less direct association of sick and well. It is not known that any form of medicinal treatment is capable of exercising a directly curative effect, but the spread of the disease can be prevented by the adoption of the broad principles of prophylaxis applicable to all of the infectious diseases, namely, isolation of the sick and disinfection of the materials in and with which the causative micro-organisms are eliminated from the body. (From a leader in the Medical Record, August 21, 1897.)

MALARIA.

Malarial fevers may be classed as regular and irregular, and the parasites divide naturally into two corresponding main groups:—(1) Parasites which produce the regular fevers—tertian, quartan, and certain quotidians. These fevers are comparatively mild, yield readily to quinine, and tend to run a regular course free from grave complications. So regular are they, and so invariable are their relations to the development of the parasites, that the course of events in a given case can be accurately foretold from simple microscopic examination of a drop of blood from the finger. (2) Parasites which produce irregular fevers, tending to grave, even fatal complications, yielding but slowly

to quinine, and very prone to recurrence. They are distinguished by the production of a special form known as the crescentic body. The fevers of this group are commonly alluded to as the pernicious or malignant fevers. (From Dr. J. H. Teacher's paper in the Glasgow Medical Journal, August, 1897.)

MALARIAL DISEASE PREVENTED BY SMALL DOSES OF QUININE.

Laveran reviews the reports of many medical officers in charge of the health of bodies of European and American men exposed to severe malarial influences (*The New York Medical Journal*). His conclusion is that quinine usually proves very potent in preventing, or at least mitigating, malarial disease, even in very unhealthy localities. Against its use the objection has been made that daily administration of this drug induces attacks of indigestion, and that quinine becomes less potent in a given case if administered constantly, the system becoming habituated to it. Yet these objections are not sound. A dose of from one-fifth to three-tenths of a gramme a day can be employed for months with impunity. Quinine destroys the causative microbes by its power as a parasiticide. The microbes of paludism, that chance to get into the blood of a person who has been treated preliminarily by the small preventive doses, find it a medium wholly or quite unfavourable to their development. At the most, they develop only with difficulty. The daily dose should not exceed three-fifths of a gramme, nor be less than a seventh of a gramme. Some prefer a dose of 1 gramme thrice weekly. To procure a rapid absorption, the hydrochloride is preferable to the sulphate, and is better supported. The best time to take quinine is at meal-times. The best way is to dissolve it in wine, although cachets or pills suffice. If added to coffee, that precipitates a portion of the quinine. (Medical Record, October 2, 1897.)

MALARIA, QUININE IN.

Dr. E. C. Register, editor of the *Charlotte Medical Journal*, recently read a paper with this title before the North Carolina Medical Society (*St. Louis Medical Era*). After many years of study, both clinical and microscopical, he has arrived at the following conclusions, in reference to the specific action of quinine in the continued forms of malarial fever:—A malarial fever without complications will subside after the plasmodia disappear from the blood; we have in quinine the means of completely eradicating malarial poison from the body; malarial fever occurring in a previously healthy subject, and in the central United States, if at once recognised and properly treated, never ends in death; it is speedily curable and never

continues, provided the nature of the disease is recognised and appropriate treatment employed. Dr. Register has made microscopical examinations of the blood of several hundred patients suffering with remittent malarial fever, and has studied closely and thoroughly the crescentic and ring-shaped bodies which, he says, are the forms of the parasite, which are responsible for the continued types of this fever, and he finds that the reason quinine does not always affect these irregular forms of the poison lies in defects in its administration. He contends that the drug is very imperfectly absorbed when given by the stomach, and when the patient has a temperature of over 102° F. He says that in cases of continued malarial fever, if distinct and well-marked intermissions of the fever are produced artificially by the use of antipyrine, acetanilide, and phenacetine, the crescentic and ring-shaped bodies will disappear, after the administration of quinine, as quickly as the spherical bodies that are found in ordinary intermittent fever. In reference to the belief that the forms of the parasite that inhabit the blood cells are not acted on by quinine, he has no doubt that this belief is erroneous. Besides his own observations, he has been able to collect the opinions of thirty-two authors touching upon this point, and twenty-eight out of the thirty-two believe that the intracorpuscular forms are not, on this account, the cause of an uncontrollable fever, and that proximity of the parasite to the blood cell does not in any way protect it from the action of quinine. (New York Medical Journal, August 28, 1897.)

MASTURBATION IN INFANCY.

The causes assigned are numerous; chief among them ranks peripheral irritation from retained and decomposing smegma. This is especially liable to occur in boys with long tight foreskins, and in those with partially adherent foreskins, allowing the retention of the smegma in small pouches. Irritating vaginal secretions in female infants, or excessive secretion of smegma and adhesions of the preputium clitoridis may be to blame; so, too, vaginal or urethral polypi. Catarrhal conditions of the bladder, vesical and renal calculi, and oxaluria may be the source of irritation. Donnè asserts that mucus and oxalates are present in the urine after paroxysms, and regards the oxalates as a result, not a cause. Local discomfort about the anus or rectum may be the exciting factor, *e.g.*, thread worms, fissure of the anus, catarrh or polypus of the rectum. In female infants the friction induced by coarse rough diapers, or hard sponges and towels may lead to the development of the habit. An excess of dusting powder, especially if at all irritating in character, may be a constant source of discomfort at the entrance into the vagina, and induce the friction of the

parts. In older boys the habit may be induced by friction from tight or ill-fitting knickerbockers, and from riding on horseback, or even on a wooden horse. Finally, it must not be forgotten that the habit is sometimes taught to boys, rarely to girls, by nurses or other servants. (Medical Times and Hospital Gazette, July 3, 1897.)

MERCURIAL INJECTIONS.

In the *Arch. f. Derm. u. Syph.*, 1897, Schulze writes of the danger of pulmonary embolism from the injection of salicylate of mercury. He reports the case of a man of 32, perfectly well hitherto, who was treated at intervals of from five to eight days with injections of this drug suspended in liquid paraffin, for syphilis. Immediately after the fourth injection, as the patient had just left the house, great giddiness and chills were experienced, followed by a long fit of coughing, by vomiting, and by sharp stinging pains in the left pulmonary region, so that he could scarcely breathe. He was assisted home, and had during the night and the following day great difficulty in breathing, and severe coughing fits, although no physical signs were present. After a few days the symptoms disappeared, and the injections were renewed. Schulze thinks that this was undoubtedly an instance of pulmonary embolus, which was produced either by paraffin (in which the mercury was suspended) or by a particle of the drug itself. These symptoms, occurring as they did within five minutes after the injection, correspond completely with those described by Lesser and others in emboli from the injection of insoluble mercurial salts. In seven cases reported by Quincke, the symptoms did not appear so soon after the injection as in the case above reported, but this may be due to the fact that oil was used instead of liquid paraffin. Schulze regards the pulmonary symptoms as less likely to be caused by mercurial intoxication than by circulatory disturbances of an embolic nature. Möller has shown that embolic symptoms may be produced in animals solely by the injection of paraffin or gum arabic, without the addition of a mercurial preparation, although it cannot be doubted that the addition of the mercury increases the danger, probably by increasing the size of the plugs carried into the veins. If the symptoms were solely those of an intoxication, other symptoms, such as stomatitis and enteritis, would be likely to be present, sooner or later. Blaschke's caution is approved of, namely, to be sure there is no blood on or in the canula after inserting the needle, and before making the injection. If these precautions are taken, Schulze considers that the intra-muscular injection of insoluble preparations of mercury becomes as safe as any other mode of using mercury. (Boston Medical and Surgical Journal, October 14, 1897.)

MORPHINE HABIT CURED BY BROMIDE POISONING.

That it is possible, by means of acute bromidism, to quickly and permanently obliterate the desire for morphine, without the usual subsequent suffering, and without creating another drug habit, in cases where that drug has been taken for several years in larger than medicinal doses, I leave the following cases to determine. [The details of two long-standing cases of the morphine habit are omitted here.] The following advantages over other methods of treatment can be claimed for the method pursued in these cases:—(1) It did away with the suffering entailed by stopping the drug. (2) The patient could not bribe the attendants when the drug was withdrawn, he could not deceive his doctor, nor could he escape vigilance—he was powerless. (3) It acted equally well, whether the patient wished to be cured or not. (4) No special attendants or establishment was needed, only nurses who took ordinary care. (5) No violence or excitement likely to result from, nor a taste to arise for, bromide given in this way. In my next case I intend to, and I would suggest that anyone trying the method should, reduce the morphine by halving the dose each day, not giving it if not asked for, pushing the bromide more rapidly than I did in those cases, not, however, beyond the stage of marked torpor, stopping it altogether before that stage if the patient has ceased to ask for morphine. It may not be necessary to produce so marked a degree of bromidism as was present in these cases. (From Dr. Neil Macleod's paper in the British Medical Journal, July 10, 1897.)

MOUNTAIN TREATMENT.

Meisser and Schröder have just presented us with a report on their experiments on the blood of persons residing at high altitudes. They maintain that the red blood corpuscles are greatly increased after a short residence at an elevation not exceeding 236 mètres, or 774·08 feet. In several phthisical patients without fever, but greatly emaciated, the red blood corpuscles increased much more rapidly than in the healthy individuals. The hæmoglobin is also increased in addition to the erythrocytes, while the white blood corpuscles are reduced. The experimenters, in attempting to explain these phenomena, confess their inability to account for the various changes that bring about the improvement, but they are confident that it is not due to the contractile power of acids, which is assigned as the cause of the accumulation of hæmoglobin, since all the phenomena rapidly disappear as soon as the patient returns to the lower level. Grawitz is inclined

to attribute this thickening of the blood to a rapid abstraction of the nutritive material from the blood in consequence of the drier climate on the hill top. Meisser and Schröder are disinclined to accept this explanation, and affirm that the deep breathing theory is a myth. They are inclined to believe that the erythrocytes in phthisical patients are of a cumulative or passive congestive nature, as that found in valvular disease. Stein's theory is that the leucocytes in phthisical patients are unduly increased by a chemotaxic action of the bacteria protein. (Medical Press and Circular, July 21, 1897.)

MUMPS.

I think, without exception, mumps is the most vexatious and troublesome of all the infectious diseases which affect public schools; and its entrance is most difficult to prevent. During the autumn term of last year we had the most severe epidemic of mumps I have ever seen in the school. There were 110 cases, some of them very severe. In this disease there is again some difference of opinion respecting the period of incubation and the duration of infectiousness after recovery. One distinguished school medical officer of my acquaintance, holds that boys may safely be sent back to school after an attack of mumps in sixteen days, provided no swelling of submaxillary or other glands remain. I think this period is too short, for in this epidemic I found that cases of orchitis occurred after the sixteenth day, no enlargement of glands being present. The committee of the Medical Officers of Schools Association advise that four weeks should elapse before a boy who has had mumps should return to school. This, on the other hand, is very long, and very trying to parents who have to keep their boys at home doing nothing all the time. The truth probably lies between the two points, and therefore I think that the period of twenty-four days is a safe medium, both for the length of incubation after exposure to infection, and for the duration of infectiousness in recovery from an attack. In this recent epidemic of mumps there were fourteen cases of metastasis to the testicle, a very large proportion. Some of them were very severe and painful, and attended with a high degree of fever. I have never seen any instance of atrophy of the testicle, nor any case of affection of the brain, such as one sees occasionally recorded. (From Dr. W. Johnstone Fyffe's paper on Infectious Diseases in a Public School, Bristol Medico-Chirurgical Journal, September, 1897.)

PHENACETINE AND ANTIFEBRINE.—Substitutes for.

Vamossy and Fenyvessy (*Therapeut. Monats.*, August, 1897), who have experimented with two new drugs, called phesine and

cosaprine, draw the following conclusions:—Both possess certain advantages over phenacetine and antifebrine, from which they are derived. They are easily soluble in water, and may therefore be given subcutaneously; they act quickly; they are less dangerous than the preparations from which they are derived; their action continues only a short time, but this may be overcome by the repeated administration of small doses. (Medical News, September 25, 1897.)

POISONING BY TRIONAL.

A case is reported in *L'Abeille Médicale* of February 13, 1897, in which a man suffering from morphinomania, and who was accustomed to employ morphine daily, received habitually twenty grains of trional every night during a period of two months, or, to speak more exactly, twenty-one drachms in twenty-six days. After one month the patient found it difficult to rise, and was in a condition of continuous hebetude. He could with difficulty support himself, and the movements of his upper and lower extremities were exceedingly ataxic. There was tremor of the tongue, the feet, the hands, and the muscles of the face. The walk was slow and laboured. In attempting to speak the syllables were transposed, or, on attempting to write, they were so disordered as to make the spelling very incorrect. There was profound psychic depression and general intellectual feebleness, with involuntary passage of urine. (Therapeutic Gazette, 1897, p. 469.)

POTASSIUM PERMANGANATE IN OPIUM POISONING.

Dr. William Ovid Moor points out that atropine, cocaine, veratrine, pilocarpine, aconitine, caffeine, hyoscyamine, hyoscine, and phosphorus, treated by the permanganate solution, give rise to no reaction. Entirely otherwise is it with opium and its alkaloid morphine. After reporting his personal experience of antagonising one-half grain of morphine by seven grains of the permanganate in eight ounces of water taken immediately after, he advises the use of this antidote, subcutaneously in from 1-5th to 1 per cent. solution, in severe cases of ether- and chloroform-poisoning; asphyxia from illuminating gas, drunkenness, laryngeal obstruction; and in uræmia, eclampsia, and similar cases, in addition to the ordinary methods. More than ninety instances of its successful use in opium-poisoning have been reported. These indications are offered:—(1) Internally, seven or eight grains in diluted solution, to antidote the opium or morphine in the stomach. (2) To neutralise morphine, which is returned to the stomach from the circulation, one grain in solution, frequently repeated. (3) As a physiological antidote, subcutaneous injection of 1 per

cent. solutions.—*Therapeutische Wochenschrift*, 1897, No. 7, S. 147. [The reports of its successful use, already of considerable number, lead to the conclusion that this should be considered as the antidote of choice.—R.W.W.] (Dr. Wilcox's abstract in the American Journal of Medical Sciences, July, 1897.)

RHEUMATISM, ACUTE.—Treatment of in Children.

The condition of slight rheumatism, in the case of children, at all events, is treated far too lightly. Timely care in avoidance of fresh chill, of all excitement or strain of heart structures, may make all the difference in the degree of heart mischief remaining in the end. Dr. Sibson found that in acute rheumatism, patients treated by rest escaped permanent heart lesion in the proportion of two to one, as compared with those allowed free action. When pericarditis supervenes, if there is much pain and distress, one or two leeches may be applied to the præcordia; but anything like profuse extraction of blood is positively harmful. Children do not bear much loss of blood. The most effective local application is that of the ice-bag—advocated by Dr. Lees. In pleurisy and pericarditis, where the inflamed membrane lies near the surface, and in intimate vascular connection with it, the application of ice appears not only to relieve pain, but to exercise a favourable influence on the inflammatory process. It is usually grateful, and readily accepted, even by young children. In cases of the deadly form of cardiac inflammation, which is perhaps the most characteristic feature of the rheumatism of childhood, viz., persistent, recurrent, subacute endocarditis and pericarditis, opium, digitalis, and strophanthus, with an alkali, are the drugs of the most service. The former is best given as nepenthe in frequent small doses of from one drop to five drops, according to age, every four hours; and it does more than any other drug to relieve distress, lessen dyspnœa, and subdue pain. If given with proper care, it is perfectly safe. Alcohol is also a most useful agent, as much from its sedative as by its stimulant property. As a last resource, and in the case of older children only, when the heart shows signal signs of failure, when the first sound becomes short and feeble, and the pulse small and irregular, hypodermic injections of liq. strychniæ in doses of $\frac{1}{8}$ drop to 1 drop or more, according to age—combined with 5 to 10 minims of brandy—or 1 to 3 minims of digitalis, given in the same way, afford the most powerful means of resting the flagging heart. Usually, however, this only effects a brief rally and respite from the final collapse. (From Dr. Cheadle's paper in Treatment, May 13, 1897.)

RHEUMATISM, SALOPHENE IN.

In the *Presse médicale* for July 10, there is an article on this subject by M. Galliard, who relates the histories of a number of cases of acute, subacute, chronic, and blennorrhagic polyarthritic rheumatism in which he employed salophene. In the cases of chronic polyarthritic rheumatism, he says, the negative results of this treatment were not surprising; in the cases of blennorrhagic rheumatism so many other medicaments failed that even a partial success with salophene was a matter of rejoicing. The amelioration obtained in one case was comparatively rapid; in another case the drug did not prevent the tumefaction or the pain, and the patient could not sleep without taking antipyrine; however, says M. Galliard, on the whole, the results were not very unfavourable. In common subacute rheumatism, salophene was not without influence in some cases. M. Galliard's conclusions concerning the action of this drug are as follows:—(1) It is particularly in acute polyarthritic rheumatism that the efficacy of salophene may be studied conveniently. (2) This drug is capable of suppressing the pain, of combating the tumefaction, of causing the disappearance of the fever, and of preventing visceral tendencies. (3) It should be administered to adults in the beginning in daily amounts of ninety grains, fifteen grains to be taken at a time in unleavened bread. (4) M. Galliard's patients always tolerated it well; there was no malaise, nausea, vertigo, or buzzing in the ears. In one case only it seemed to keep up the agitation which a dose of sodium salicylate had given rise to. It sometimes stimulated diaphoresis. (5) M. Galliard had not observed the remarkable results from the use of salophene which the sodium salicylates gave in some cases of acute rheumatism. He thinks it is less rapidly efficacious than sodium salicylate given in equal doses. (New York Medical Journal, August 7, 1897.)

RHEUMATOID ARTHRITIS.

At the present time the most universally applicable and successful method of dealing with early rheumatoid arthritis, is by means of baths of various kinds. The Scotch douche is in certain cases a very valuable means. It consists in the direct application of an alternating stream of hot and cold water. It promotes the absorption of the exudations in the joint, and it also relieves pain. Dry baths are, however, generally more effective than moist ones. The dry sand bath has for a long time been used with more or less success. But, in my opinion, the most valuable of all methods of treatment is the use of baths of superheated dry air, after the Tallerman method. It has been used in twenty cases of rheumatoid arthritis, in the Royal Victoria Hospital, during the past nine months, with gratifying

results. The apparatus consists of a copper cylinder, of various shapes and sizes. The model usually employed is sufficiently long to admit a lower limb to some inches above the knee. By means of valve taps, the moisture from the limb is expelled, so that the air in the chamber is kept dry. The temperature in the chamber is kept usually from 240° to 300°. The first marked effect is copious perspiration all over the body. The pulse is increased from 15 to 30 beats, and the temperature is usually elevated from 1° to 2°. In all, we have treated twenty cases with the hot air bath. In fourteen of the twenty cases pain in the affected joints was present, and of a severe character. In the great majority of the cases the relief was marked even after the first bath, and after several baths the patient, except on movement, was practically free from pain. As a result of this relief, sleep, which usually before was greatly disturbed, was possible. In addition there was some apparent change for the better in nutrition. In spite of losing daily more than a pound in weight from the loss of fluid by perspiration, the patient usually steadily gains in weight. Gains of from three to four pounds weekly have been common. As regards the effect on the affected joint, it is various, depending on the amount of effusion and the degree of ankylosis. Generally a considerable increase in the mobility follows after the use of a few baths. It cannot be expected that restitution can take place in advanced cases, but before much actual destruction takes place, there is every reason to look for a decided check to the progressive character of the disease. (From Dr. James Stewart's paper in the British Medical Journal, October 30, 1897.)

SALINE INJECTIONS.—Transfusion and Infusion.

(By MM. Delamere and Descazals.) *Indications.*—Tuffier and Dujarier mention three classes of cases in which injections may be practised—hemorrhages, infectious medical diseases, and surgical and obstetrical infections. The experiments of Delbet and of Roger allow a fourth group to be added, that of poisonings. In hemorrhage, the injections play a double part, raising the arterial tension and acting as hæmostatic. In grave cases the injections should be large, and one should not hesitate to use the intravenous method to get a more rapid effect. The quantity of fluid to inject varies from 1 to 3 litres, according to the state of the patient. The coagulating properties of saline injections are of special value when the seat of the hemorrhage is inaccessible, or due to some modification of the blood, such as hæmophilia. The intestinal hemorrhages of typhoid fever, hæmatemesis of gastric ulcers, hæmoptysis of phthisis, certain uterine hemorrhages, all indicate the use of saline injections.

In infectious diseases lavage of the blood has often given good results. Though usually it is important to ascertain the condition of the heart muscle, as well as of the kidney, before instituting injections, yet M. Dalché has recently successfully treated a patient with septic endocarditis by five injections of one litre each on five successive days. Renal affections benefit much less from saline injections, but in cases of infective albuminuria, of typhoid, for instance, the injections may be used. M. Fourmeaux cites cases of uræmia cured by this method, preceded by bleeding. Serum injections have been little used in affections of the respiratory system. In diseases of the alimentary system, saline injections have given excellent results. In the intestinal troubles of infants, M. Barbier has used the subcutaneous method with some success. M. Bosc has brought together a number of observations on intravenous injections in typhoid fever. M. Reclus has recently employed the same treatment in a case of rabies, with the result of bringing about an immediate improvement, which was, however, of very short duration, the patient dying a few hours after. M. Tuffier has succeeded, on the other hand, in curing two cases of tetanus by this method. The authors think that in many cases of pyrexia of contagious diseases, such as measles, variola, and scarlatina, the state of the patient may be improved by saline injections. (From Dr. Francis J. H. Coutts's abstract in the Medical Chronicle, July, 1897.)

SCARLET FEVER.—Infectiousness in.

That the period of infectiousness varies in different cases is true, and the severer the case the longer is it likely to remain infectious. Hitherto the generally recognised period during which isolation should be maintained in mild and ordinary cases is six weeks, provided desquamation is complete. In my opinion, that period is too short, even in milder cases, and although I admit that the desquamating cuticle is infectious, I am not certain that the completion of desquamation is a safe and reliable guide as to when a given patient ceases to be infective, even in cases where no complication arises. I think that a minimum of eight and a maximum of thirteen weeks may be considered safe, until the contrary be shown by the result of accurate records based upon careful observation, or they be proved to be incorrect or inadequate by exact bacteriological methods. (From Dr. J. T. Neech's paper in the British Medical Journal, September 25, 1897.)

SERUM, THE MARAGLIANO.

Hager, in a preliminary communication (*Münch med. Woch.*, August 3, 1897) relates his clinical experience of this serum

in the treatment of tuberculosis. A great advantage of the serum treatment over tuberculin is that it does no harm even in advanced cases of tuberculosis. The reports on the value of this serum have been generally favourable. The author would confirm the statement of Maragliano that the serum may have a favourable action on all the specific symptoms of tuberculosis. The serum does not appear to exercise any effect on the tubercle bacillus itself, but neutralises the products of this micro-organism. Among cases of advanced phthisis treated within a year, and mostly confined to bed, only one had succumbed to the disease. The author then discusses the action of the serum on the lupus lesion. It can be painted on the patch, and yet produce its beneficial results. It produces a swelling of the lupus tissues, and in a few days retrogressive changes are present. The neighbouring lymphatic glands become swollen. Three or four paintings usually suffice if the lesion is not too extensive. The cicatricial changes develop themselves speedily under this treatment. A simultaneous injection of the serum hastens the recovery. It is quite possible that Maragliano's method of obtaining the serum may be improved upon, and thus a more efficient serum produced. The author concludes by stating that those trying the preparation as obtained from Merck will not fail to find that this treatment constitutes an advance. (British Medical Journal Epitome, September 4, 1897.)

SIGNS AND SYMPTOMS, SOME.

(1) Irregular pulse in children after a serious illness—or indeed after an illness which is not serious—is so common as to be of little importance. (2) Difference in size of the pupils is of itself of no value in the diagnosis of disease; it is quite compatible with perfect health. (3) *Tâche cérébrale* is a sign of little or no value. The most infallible early sign of death is loss of faradic excitability by the muscles. (4) During almost any very acute illness the mind may become so clouded that afterwards the patient remembers scarcely anything that has happened in its course. (5) In all nervous diseases sensory symptoms are apt to be very fugitive. (6) In children, finding the apex-beat of the heart in the fourth costal interspace is no sign of disease; it is not at all uncommon. (7) Convulsions are often the sole symptom of brain-disease of various kinds in children. (8) So little is known about the causation of anæsthesia, that, unless it be a hemi-anæsthesia, perhaps the less said about it for purposes of diagnosis the better. (9) It is sometimes difficult to make out a true hemi-anæsthesia, because in order to do so the sight, hearing, and taste must be tested. (10) All sorts of anæsthesia are met with in disease of the pons, difficult to

explain because we know so little of the course of sensory fibres in this situation. (11) Examination of sputum for pus, microscopically, is of no use, for the naked eye appreciates the only important fact—the *amount* of pus, whether great or small, and not its mere presence, which may always be presumed. (12) Spirit-drinking, much more often than wine or beer drinking, may produce no facial signs, even after indulgence for many years. One sign, however, which it may produce, is pallor—quite the opposite of the condition produced by the other forms of alcoholic drinks. (13) The "blue line" in cases of plumbism may become apparent quite early in the disease. When acetate of lead was wont to be given freely for cases of hæmoptysis, a "blue line" sometimes developed in three weeks from the commencement of taking the drug. (14) There is, perhaps, no disease in which crippling may not result from the patient lying curled up in bed. In enteric fever it is not uncommon, and bad contractures are occasionally seen in cases of alcoholic neuritis. These deformities should be studiously avoided, or, if this has not been possible, they should be corrected early. There is also a tendency for dislocation of the tibia backwards upon the femur to take place. (15) A muscle may be quite paralysed to faradism, and yet not be paralysed to volition. The opposite condition is, of course, much commoner, occurring as it does in all cases of upper segment paralysis. (16) Nummular sputa, though most often found in phthisis, are not diagnostic of that disease. (From Dr. Gee's Aphorisms, collected by Mr. T. J. Horder, in the St. Bartholomew's Hospital Reports, xxxii., 1897.)

STREPTOCOCCUS INFECTION.

Marmorek's serum should always be used by hypodermic injection into the cellular tissue. If due antiseptic precautions are observed, and ordinary skill used in its administration, it is free from danger, and the dose is practically without limit. In all grave cases, such as puerperal septicæmia, and especially if treatment has been considerably delayed, an initial dose of 30 c.c. is advised. This may be followed by doses of 10 c.c. or 20 c.c. every twelve or twenty-four hours, according as the symptoms are affected. In ordinary cases of erysipelas, the initial dose is 20 c.c., and in many instances may be all that is required. However, it may be repeated once or twice in twenty-four hours if necessary. In the complications of diphtheria and scarlet fever, one dose of 10 c.c. will be found sufficient in the vast majority of cases. In the mixed infection of tuberculosis, the dose should ordinarily be 10 c.c., to be repeated every second or third day until the microbes have disappeared from the sputum, usually requiring from four to six injections. In all other affections, such as acute abscesses,

pelvic inflammations, chronic inflammation of the middle ear, and in suppurative processes generally where the streptococcus germ is found, the dose must be regulated according to the exigencies of the case. Children bear the serum remarkably well, and 10 c.c. is the usual dose for children of all ages. *Conclusions.*—(1) In Marmorek's serum we have a remedy of the greatest therapeutic value. (2) So far as is known, it is only applicable to streptococcic infection, simple or mixed, hence it naturally follows that (3) an early bacteriologic examination should be made in order to settle the question of diagnosis and point the treatment. (4) Its action upon the microbe is rapid and certain, if given in adequate doses. (From Dr. Geo. W. Cox's paper in the Journal of the American Medical Association, September 11, 1897.)

SYPHILIS, SERUM TREATMENT OF.

Grosz (*Wien. med. Bl.*, 1897, No. 8) gives a critical and historical account of the curative treatment of syphilis by means of serums. He states that three distinct lines have been followed by clinical observers, all of which are asserted to have resulted in some measure of success. These are:—(1) Subcutaneous injection of the blood serum of different animals, these having a natural immunity to the syphilitic infection; (2) animals have been inoculated with blood from patients with secondary syphilis, or have had chancres engrafted under the skin, and then after some time, they have been bled and their serum injected into syphilitic patients; (3) the injection of blood-serum taken from patients with secondary or tertiary syphilis into recently infected persons. Grosz concludes that the numerous failures and contradictions simply show that none of the measures hitherto used are of any special value, and that more carefully considered attempts to solve the question are urgently needed. (From Dr. Stockman's abstract in the Edinburgh Medical Journal, July, 1897.)

SYPHILIS.—The Treatment of.

Dr. Whitla, of Belfast, Ireland, regarded it as proved that mercury has a specific or curative effect on syphilis, and thought it best to limit his attention to the following points:—(1) How mercury and the iodids are supposed to act; (2) when should mercurial treatment be begun; especially, should it be given in the primary stage? (3) the various methods for its routine administration, its dosage, and the length of time necessary for mercurial treatment; (4) the treatment of tertiary symptoms and congenital syphilis. The pharmacology of mercury—the mode of absorption, especially when administered by inunction, its elimination, &c., was considered. Mercury he regarded as a vital antidote to the syphilitic poison, and so long as the virus

of syphilis remains in the organism, mercury, he believed, would expend its force upon it without injury to the patient. This, he thought, gave a working hypothesis as regards dosage. The question of the bactericidal power of iodids, in connection with Binz's view, was dealt with, and their inutility in the first and early second stages emphasised. The continuous and interrupted methods of administering mercury were treated at length, although it was stated that these could not be rigidly separated. The continuous method was favoured by the speaker. He prescribes small doses as early as possible. Routine treatment was deprecated. As a guide determining the effect of the mercury, the weight-chart was strongly recommended. Of the various modes of administration, the method of inunction is most generally useful, although this possesses many disadvantages. Under ordinary circumstances, small doses of mercurous iodids are sufficient. In the tertiary stage, he advised pushing the iodids until the symptoms abate. (The Montreal British Medical Association Meeting, Medical News, September 25, 1897.)

THYMUS AND ADRENAL FEEDING.

From the clinical observations, including sphygmographic tracings made on the various cases I have thus far studied, I conclude that thymus extract will, in many cases of exophthalmic goitre, improve nutrition, mitigate nervous disturbances, reduce exophthalmus, greatly reduce goitre, and moderately quiet the heart and restore vascular tone, completely accomplishing this in milder cases; while adrenal extract seems to have greater influence upon the circulation and less effect upon the thyroid and ocular symptoms. We are making studies upon the blood and secretions, which are not sufficiently advanced for publication. I do not believe that either of these remedies, or any other remedy, removes the fundamental, constitutional, idiosyncratic instability of the toxic mechanism of the circulation; but I do believe that they are competent in the one case—thymus—chiefly by an antitoxic action, to counteract the exciting influences, and in the other case—adrenal—chiefly by opposing action upon the circulation to neutralise the effect of those influences. Probably both share both these actions in some degree, and I should expect the best results to follow their combined administration. (From Dr. Solis Cohen's paper in the Journal of the American Association, July 10, 1897.)

THYROID FEEDING IN CHILDREN.

Dobrowsky (*Archiv. f. Kinderheilkunde*, Bd. xxi., S. 54) describes his observations in the treatment of thirty children in Monti's clinic with thyroid extract. Nine were cases of

goitre, eight of prurigo, one of obesity, and twelve of idiocy or cretinism. To those less than two years old, a half to one tablet of Merck's thyroidine was given daily during the first week, and one to two tablets a day thereafter. Old children began with one or two tablets daily, and later took three or four, for three weeks at least, and often for three or four months. Each tablet contained 35 centigrammes of thyroidine. In all the cases a reduction of weight, varying from 500 to 3500 grammes, was produced; this effect being manifested toward the fourth week of treatment, and not continuing after treatment was suspended. Return to the initial weight began ordinarily eight to fifteen days after the administration of the remedy ceased. In parenchymatous goitre this treatment constantly produced a considerable diminution of the tumour, which could be observed after two or three days of treatment, and reached its maximum in the course of the third week; after this no further diminution occurred, though treatment was continued. In cases of prurigo the itching ceased, the skin became more supple, and the lesions disappeared. These effects were manifest in eight patients after several days' treatment; but in all the cases the suspension of treatment was followed by relapse within three weeks. Contrary to the very encouraging experience of many other observers, Dobrowsky obtained practically no effects in cretins. During this treatment the blood showed no modification in its composition, but all the cases exhibited a tachycardia without palpitation or dyspnœa, which lasted during all the period of treatment. Diuresis, as well as thirst, was increased. The urine contained a considerable increase of phosphates, and often notable quantities of indican, but no albumen or sugar. (American Journal of Medical Sciences, September, 1897.)

TYPHOID EXCRETA, DISINFECTION OF.

Dr. W. Gilman Thompson (*Albany Medical Annals*, April, 1897) concludes as follows:—(1) The best disinfectants of typhoid stools for practical use are—(*a*) 1 to 500 acidulated solution of corrosive sublimate; (*b*) 1 to 10 crude carbolic acid solution; (*c*) chlorinated lime. (2) Owing to the possibility of injury to plumbing, the carbolic acid solution is preferable wherever plumbing is concerned; the lime is best for country use in privies and trenches. (3) The disinfectant should be thoroughly mixed with the stool, and left in contact with it for fully two hours; enough of the disinfectant must be added to cover completely the stool with the solution. (4) The bed pan should be kept ready filled at all times with at least a pint of the disinfectant, into which the stool is at once discharged, and should be cleaned with scalding water and one of the disinfecting solutions. (5) Rectal thermometers, syringes, tubes, and all

utensils coming in contact with any of the fæcal matter, must be disinfected with the corrosive sublimate or carbolic acid solution. (6) After each stool, the patient's perineum and adjacent parts should be washed and sponged with a 1 to 2,000 corrosive sublimate solution. (7) Nurses and attendants should be cautioned to wash their own hands thoroughly, and immerse them in a 1 to 1,000 corrosive sublimate solution, after handling the bedpan, thermometer, syringe, or patient, or giving sponge or tub baths. (8) All linen and bedclothing used by the patient should be soaked in a 1 to 20 carbolic acid solution, and subsequently boiled for fully two hours. (9) Disinfection of the stools should be begun as soon as the diagnosis of enteric fever is established, and should be continued for ten days after the temperature has remained at the normal. (10) In localities where a proper drainage system is lacking, the stools should either be mixed with sawdust and cremated, or buried in a trench four feet deep after being covered with chloride of lime. (Medical Record, September 4, 1897.)

TYPHOID FEVER.—Elsner's Method of Diagnosis.

Dr. Mark W. Richardson said, before the American Medical Association, that Elsner's gelatine-culture medium had first been prepared with carbolic acid; but, as a result of later experiments, he had been led to substitute potassium iodine, and the inoculation of this gelatine with the stools of typhoid fever had been very successful. No other bacteria than those of typhoid fever could be made to grow upon this medium. He had been led to examine this method of testing for typhoid fever partly from a desire to see whether it would confirm the tests made with the blood-serum, and partly to see whether it could be relied upon in those cases in which Widal's test failed to give a reaction. The result of his investigations convinced him that the serum test was preferable on account of its greater convenience, in those cases where it gave a positive reaction; but cases in which the serum test had failed might show a typical reaction by Elsner's method. An examination of twenty-nine cases other than typhoid showed no bacilli by Elsner's method, or the isolation of bacilli was imperfect. The statement made that the typhoid bacillus was a ubiquitous organism, was not confirmed by this method, as the examination of the non-typhoid cases had failed to show the presence of the bacillus. (Boston Medical and Surgical Journal, July 1, 1897.)

Typhoid Fever.—Hepatic Complications of.

Recently we referred to the gall-bladder in infection which may occur in the course of typhoid fever; this is not, however, the only hepatic complication of the disease. According to Osler, they may be considered under the following heads:—

(1) the focal neuroses; (2) jaundice in the course of the disease; (3) abscess; (4) affection of the bile passages. Jaundice in typhoid fever is rare, only two cases occurring in 500. Brackstein has showed that the typhoid bacillus lived fifteen and a half weeks in the biliary passages, and the colon bacillus longer. There is great possibility of infection of gall-bladder. The production of an acute cholecystitis without typhoid infection is possible from the records of the present day. (Medical Times and Hospital Gazette, September 25, 1897.)

TYPHOID FEVER IN CHILDREN UNDER FIVE YEARS.

Rocaz, in the *Annales de la Policlinique de Bordeaux*, enters upon a discussion of the peculiarities of enteric fever as met with in very young children. The onset is frequently sudden, more so than in adults, the temperature rising to 104° F. or more in a few hours. Rillet and Barthez, however, look upon this sudden onset as indicative of gravity in the disease. The intestinal symptoms are less marked than in adults, the younger the children the fewer and smaller the ulcerations. Constipation, obstinate in character, is the rule in the early periods of the disease, but diarrhœa is a frequent complication, frequently persisting after defervescence; is obstinate, and requires energetic treatment and strict diet. Emesis and anorexia are often prominent symptoms, sometimes assuming grave features. The tongue, as a rule, remains moist, and varies as to foulness, or otherwise. Temperature is like that in the adult, though hyperpyrexia is commoner, and comparatively well borne by the patients. The pulse is seldom dicrotic, but often rather slow and irregular, like that of meningitis. In the febrile stage these irregularities are indicative of cardiac exhaustion, call for careful attention, and often presage death; in convalescence they are not so grave. In the majority of cases the heart is regular in action. Broncho-pneumonia is a grave complication. With regard to rash, lenticular rose spots are the only pathognomonic symptoms in children, and are usually regular as regards appearance, time of eruption, and prognostic value. Sudamina are common after the appearance of the rose spots. Desquamation is frequent after this disease in the very young. Abnormal eruptions are also of frequent occurrence in children, and more so than in adults. The duration of the fever is shorter in children, though relapses occur more frequently, and are usually less serious than the first attack. Convalescence is rapid, surprisingly so, and prognosis is mainly dependent on age, grave under three years, less so at four, and generally favourable at five and more. (Dr. F. W. F. Ross's abstract in Treatment, 1897, p. 111.)

Typhoid Fever.—Relapse in.

Errors in diet are in some instances held responsible for relapse, but only in a very limited number of cases can the diet be held to be definitely responsible. I think the term relapse should be limited exclusively to reinfection after a distinct and definite period of apyrexia. Cases in which the temperature falls not quite to normal, say to 100° F., or the morning temperature to 99·5°, while for three or four days there is a distinct lull, and then a recurrence of the symptoms, should be grouped as intercurrent relapses, and not as true relapses. The occurrence of a relapse is an indication that immunity in typhoid fever is slowly acquired, and not fully acquired when apyrexia is reached. The sources of the reinfection are as yet unknown, just as are the conditions under which relapse develops. The evidence of relapse is very different in different series of cases. Up to August 5, 1896, 500 cases of typhoid fever were treated in the wards of Johns Hopkins Hospital, and forty cases had relapsed, or 8 per cent. That is the same percentage as is given by Liebermeister in about the same number of cases. It is a very much larger percentage than that given by Murchison in a larger series of cases—in two or three thousand cases there were only 3 per cent. of relapses. Other percentages run up as high as 20, but older observations, and even more recent ones, show that the percentage of relapses varies very much indeed. The relapses may not be single, but double, now and then triple, and a few cases have been reported in which four or five relapses occurred. We have only had a few cases in which two relapses occurred, none in which there were three. The mode of onset of the relapse is interesting. It is not always, as stated in most works, exactly like the original attack—a stepping up of the temperature each day. It may, in fact, begin abruptly, as in the case which I have just mentioned. The onset of the first relapse was with a series of chills, and a maximum temperature of 105·5° was reached within twenty-four hours of the beginning of the fever. Those cases are not very uncommon. In other instances the relapse is the exact counterpart of the primary attack, the temperature rising gradually, a degree or a degree and a half daily. I do not think one can state that hydrotherapy has any influence in promoting relapses. (From Dr. Osler's paper in the Journal of the American Medical Association, July 17, 1897.)

Typhoid Fever.—Serum Diagnosis of.

Welch, in a paper opening the discussion, at the recent meeting of the American Medical Association, gave emphasis to the following practical points (*Amer. Medico-Surgical Bulletin*, 1897, September 10, p. 779):—(1) Experience has demonstrated

that the method of serum diagnosis of typhoid fever is of great practical value. (2) The alteration of the blood on which this method is based, is a specific effect of infection or intoxication with the typhoid bacillus. (3) The microscopic serum-test is to be preferred to the macroscopic methods. (4) Quantitative determinations, relating especially to the culture, the time limits, and the dilution of the serum, are of importance, and, at least in doubtful cases, should not be neglected. (5) As the reaction may be delayed or occasionally absent, a negative result of the test does not exclude the diagnosis of typhoid fever. The later in the course of the disease the test is applied, and the oftener the examinations are repeated at intervals, the less is the probability of the existence of typhoid fever. (6) The persistence of the reaction, sometimes for years, after recovery from typhoid fever, is to be borne in mind in interpreting the reaction in febrile conditions. The appearance of the reaction and its increase during the period of observation, speak for fresh typhoid infection. (7) The danger of mistakes from positive reactions in non-typhoid cases can be guarded against in nearly all cases. (8) Provision should be made, especially by the establishment and support of municipal or State laboratories, to render generally available to practitioners the serum method of diagnosis, as well as other bacteriologic procedures of similar practical value. (Dr. Hewlett's abstract in Treatment, October 18, 1897.)

Typhoid Fever.—The Woodbridge Treatment of.

In the *Jour. Amer. Med. Assn.*, July 10, 1897, Woodbridge gives a few brief quotations from the reports of 193 physicians who have treated according to his method 2,078 cases of typhoid fever, with forty-five deaths. He has now collected data of nearly 8,000 cases, having a death rate of 1·91 per cent. This includes every death known to have occurred under the treatment, or any modification of it. Several deaths in which the treatment was known not to have been properly applied, a large number in which the treatment was not commenced until after the patient was moribund, or practically so, and a few cases in which death was not due to typhoid fever, or its sequelæ, are included. In only seven of the fatal cases do the reports show that the proper treatment was instituted on or before the eighth day of the disease. In the case of 4,935 patients who recovered, and in whom the duration of illness was given, it was 12·7 days. (Medical News, September 18, 1897.)

TYPHOID STOOLS.—Examination of.

Richardson (*The Jour. Amer. Med. Assn.*, July 3, 1897) finds that the examination of the stools of typhoid patients has a value in diagnosis only second to that of the serum test. In

thirteen cases of active typhoid, he was able, by using a new agar medium, to isolate typhoid bacilli in ten instances, while of twenty-nine non-typhoid individuals whose stools were examined, not one showed the presence of bacilli. All of the cases in which bacilli were found gave a positive serum reaction at least two days before the bacilli were found in the stools, so that the test is decidedly inferior to that with serum, though it has a value as a confirmatory test, especially in doubtful cases. It was also found that, although the organisms rapidly diminish with beginning convalescence, they do not entirely disappear for several weeks, a point of importance in connection with disinfection. The agar preparation used, and which was found to give great satisfaction, was that recommended by Capaldi, which contains enough chloride of potash to prevent the growth of many forms of bacteria. The appearance of the coli colonies and those of typhoid, are so different that it is much easier to tell them apart than has been the case on the culture media heretofore employed. (Medical News, August 28, 1897.)

TUBERCULIN.—Diagnostic Value of.

[The following views are not shared by all.—E.F.T.] We will summarise briefly as follows:—(1) The tuberculin method is simple and easily applied. An absence of reaction after injection indicates almost invariably an absence of tuberculosis. The presence of a reaction indicates the presence of tuberculosis more than four times out of five. (2) The method is especially applicable to the diagnosis of incipient pulmonary tuberculosis and of glandular, peritoneal, pleural and bone tuberculosis, where the bacilli cannot readily be found. (3) The general febrile reaction is a more generally useful diagnostic phenomenon than the local reaction. (4) The use of small preliminary doses of tuberculin is to be avoided on the ground of producing a gradual tolerance and a loss of general reaction. (5) The size of the best dose for diagnostic work is a matter for further study. It is probably between five and ten milligrammes for adults. (6) Ruedi's statement, that females react to tuberculin less readily than males, has not been confirmed by our results. (From Dr. F. W. White's paper in the Boston Medical and Surgical Journal, August 5, 1897.)

TUBERCULIN, THE NEW.

The *Deutsche Med. Wochensch.*, xxxix., 1897, has recently collected details as to experience to date on the use of the new tuberculin. Although it will take a long time to arrive at anything like a definite conclusion, the observations made and published will, to a certain extent, be interesting and useful. Herr Spenger (Davos-Platz) has used it in appropriate cases,

and has observed only good results from its use. He already considers it very valuable as a means of treatment. Rembold, of the Marien Hospital, Stuttgart, considers it valueless in cases of mixed infection—*i.e.*, where there is suppuration—and in cases of pure tuberculosis of the lungs little is to be hoped for from it. In bad cases considerable and lasting improvement may be expected; in many moderately severe cases an almost exclusively good result, mostly in the form of complete recovery in milder cases. His opinion on the drug is not yet final. Gerber and Prang, of Königsberg, in Prussia, observed great weakness and kidney trouble. In two cases of lupus, striking improvement was observed, and in one perfect recovery after large doses. It is possible that the drug had a good effect in one case of tuberculous glands of the neck. In tuberculous affections of internal organs the effect varied; in one case retrogressive changes were marked, but no changes were observed in the condition of tuberculous lungs. The tubercle bacilli in sputum were always diminished by large doses. The larynx, which could be observed directly, showed unmistakeable improvement. The reporters are of opinion that under more favourable conditions, more good would have resulted from the use of it. A. van Hoorn (Amsterdam) treated as out-patients ten cases of lupus and one of tuberculous epididymis with T. R. Although no case could be pronounced cured, the results were so good that their publication became a duty. The lupus cases were free from complication; the treatment was very lengthened, 169 injections in the ten cases. There was almost always reddening and swelling of the site of injection, and symptoms of general disturbance with rise of temperature. All the patients, however, improved, and were satisfied with the treatment. In the case of tuberculosis of the bladder, such disturbances were produced in the bladder that the injection could only be given once a week, and in two months the dose could not be raised beyond 1 mgrm. At the same time, the reporter did not think as much could have been effected in any other way. P. Kaatzer (Hanover) reported on the treatment in pulmonary phthisis. Two advanced cases were treated without any good result. Sometimes high temperature suddenly occurred, with violent headache. J. Petuschky (Dantzig) was favourable to the treatment, but he thought it would be very tedious. It was scarcely suitable for private practice, and could be best carried out in institutions. J. Bukovsky, of Prof. Janowsky's Klinik, Prague, gives his opinion as to the results of his trials. He admits that, like the original tuberculin, T. R. has a high diagnostic value. It promptly indicates the smallest tuberculous collections. Upon the whole, it acts unfavourably on the general condition (high temperatures, headaches, pains in the limbs, vomiting, and in two cases an

exanthem occurring). The local effect cannot yet be determined. The only case in which the series of injections was concluded, could not be looked upon as cured. In the other cases the results were not better than with the old tuberculin. As regarded its immunising value, this was problematical. The opinion was based, however, only on his experiences with lupus. (Medical Press and Circular, October 27, 1897.)

TURPENTINE.

Dr. J. B. Walker, of Philadelphia, dwelt especially upon the effects of turpentine in catarrhal affections, and as a hæmostatic where the lesion was in the mucous membrane. In gastric ulcer, whether for its influence on the ulcerative process or as a hæmostatic, it ranks, *par excellence*, both for efficiency and acceptability by an irritable stomach. Given in small doses, two to ten drops in water, sweetened by the oleosaccharatum anisi, each dose prepared as taken, its acrimony is avoided, and the most sensitive stomach will retain it. In catarrhs, subacute or chronic, whether in stomach, bowels, or bronchial tubes, or urinary tract, as a stimulant, attractive, reaching every mucous membrane of the body either in its ingestion or elimination, its virtues are invaluable, modifying secretion and influencing cell nutrition. In the winter coughs of the aged and infirm, its general stimulant action is an additional advantage to its local effect. (Boston Medical and Surgical Journal, July 29, 1897.)

VACCINATION AND TUBERCULOSIS.

According to the Berlin correspondent of the *British Medical Journal*, July 3, 1897, the scientific committee for all matters relating to medicine and public hygiene, has replied in the negative to the question asked by the Medical Department of the Prussian Ministry of Education—whether it is possible for vaccination to cause a tendency to tuberculosis and scrofula, and, if so, under what conditions. The committee takes the ground that since the discovery of the tubercle-bacillus as the cause of tuberculosis, vaccination cannot be held responsible as a cause of that disease. As to the allegation frequently made that vaccination produces a disposition to tuberculosis, it is often assumed that certain diseases, *e.g.*, diabetes, measles, whooping cough, and debilitating diseases generally, cause such a predisposition. The question arises:—Can the short, feverish attack produced by vaccination be included among these? It is to be remembered that tuberculosis is the most widespread disease known, so that of course a number of vaccinated persons must become its victims. There is, however, no evidence that would permit recognition and proof that in any case of

tuberculosis or scrofula developing after vaccination, the disease is a consequence of the prophylactic procedure, or that would go to show that an individual after vaccination is more predisposed to scrofula and tuberculosis than are unvaccinated persons. Mortality statistics on a large scale also go to show that vaccination is not even indirectly a cause of tuberculosis. Tuberculosis is the most frequent cause of death, and if really increased by compulsory vaccination, the mortality should have increased since the introduction of the latter. The reverse, however, is the case. In spite or strictly enforced revaccination, the mortality from tuberculosis in the Prussian army has diminished. It is possible that untoward complications of vaccination, such as erysipelas, may weaken the organism, and lower its resisting power to the invasion of the tubercle-bacillus. Neither is it to be denied that when tubercle-bacilli have already found their way into the organism, vaccination may be followed by their increase or spread. (Medical Record, September 4, 1897.)

VARICELLA GANGRÆNOSA.

Our knowledge of varicella gangrænosa is still so incomplete that every well-recorded case is of interest. In the September number of the *Archives of Pediatrics* are given two good examples of the disease. The first is described by Dr. William F. Lockwood, of Baltimore, and is accompanied by a photograph. A well-nourished female child, aged 2 years, exhibited the eruption of varicella. Next day a wide zone of dusky red dermatitis occupied nearly the whole surface of the trunk. Rapid ulceration of the spots within this area ensued. The contents of many of the vesicles became hemorrhagic. Bleeding from the mouth and nose occurred, and blood was extravasated in the skin over the pubes and about the genitals. The gangrenous spots varied in depth, and in size from a pea to a surface measuring 1 in. by 2 in. They often occurred where there were no varicella vesicles. On the trunk were large patches where the epidermis only was removed, exposing purplish dry surfaces. These were due to the dermatitis, and did not radiate from the chicken-pox vesicles. The deeper spots showed a dry, hard, black eschar in the centre, an ulcerating border, and an elevated inflamed edge. The left eye was closed from swelling and ulceration of the upper lid, and there was free purulent discharge from between the lids. The child emitted an extremely fœtid odour. Death took place on the eighth day, apparently from broncho-pneumonia; but satisfactory examination of the chest was not possible. The second case, described by Dr. Lewis Mann Silver, of New York, was that of a boy in good condition, aged 2 years. The illness began with diarrhœa, which was followed by a temperature of 103° F.,

lethargy, and a convulsion. On the fourth day the body was covered with the characteristic rash of varicella. The mucous membranes of the mouth and conjunctiva were congested. On the third day of the eruption, circles of congestion, from $\frac{1}{4}$ in. to $\frac{1}{2}$in. in width, were noticed around several of the spots, which had become black and depressed in the centre. Next day three gangrenous areas, measuring from 1 in. to $2\frac{1}{2}$ in. across, appeared on the neck. On the following day both eyelids were so much swollen that they could not be opened, and there was a profuse discharge of blood and serum from the mouth and nose. The urine contained abundant albumen and numerous granular casts. The child died in the evening, soon after a convulsion. (From a leaderette in The Lancet, October 9, 1897.)

YELLOW FEVER, BACILLUS OF.

It is a little rod, with rounded extremities, united at best by pairs in cultures and in groups in the tissues, from two to four micromillimetres in length, and generally two or three times longer than it is broad. It is sufficiently polymorphous. The best way to demonstrate not only its presence but also its special tendency to arrange itself in small groups, preferably in the blood capillaries, consists in placing in the incubator, at 37° C. for twelve hours, a fragment of the liver taken from a fresh cadaver, in order to favour the multiplication of the specific microbe. The yellow fever bacillus grows sufficiently well in all the ordinary culture media. In common gelatine it forms rounded colonies, transparent and granular, which, during the first three or four days, present an aspect analogous to that of leucocytes. The granulation of the colony becomes more and more pronounced, appearing ordinarily as a nucleus, central or peripheral, completely opaque; in time the whole colony grows entirely opaque. It never liquefies gelatine. In beef bouillon the bacillus grows quickly, without forming either pellicles or deposits. On blood serum solidified, it grows in a manner almost imperceptible. Cultures on agar-agar represent for the "bacillus icteroides" a means of diagnosis of the first order; but the demonstration by this means of diagnosis is efficacious only under certain determined conditions. If the colonies are allowed to develop at 20°—22° C., they appear like drops of milk, opaque, projecting, and with pearly reflections; that is to say, they are completely distinct from those grown in the incubator. It is a facultative anaërobe, and does not resist the Gram stain; it ferments insensibly lactose, more actively glucose and saccharose, but is unable to coagulate milk; it does not produce indol, and is very resistant to drying; it dies in water at 60° C., or after being exposed for seven hours to the solar rays, and lives for a long time in sea water. The microbe of yellow fever is pathogenic for the greater number of the

domestic animals. Few microbes have a pathological dominion so extended and so varied. Birds are completely refractory, but all the mammiferous animals upon which I have experimented have shown themselves more or less susceptible. But of all the animals, that which lends itself best to showing the close analogy, anatomically and nosologically, between experimental yellow fever and human yellow fever, is the dog. (From Dr. Sanarelli's paper in the Medical Record, July 24, 1897.)

AFFECTIONS OF THE NERVOUS SYSTEM.

ABSCESS, OTITIC CEREBRAL.

Dr. Green draws the following conclusions in his paper:—(1) In otitic brain disease early operation is advisable, but an early exact diagnosis is often impossible. (2) The chances are 79 in 100 that a fistula through the bone from the ear will lead directly to the brain disease. (3) The infected ear requires operation in any case, and this operation can be combined with an exploration for the bony fistula, and the recognition and treatment of the brain disease. (Boston Medical and Surgical Journal, August 12, 1897.)

ALCOHOLISM, STRYCHNINE IN CHRONIC.

Dr. F. Combemale regards as the capital indication for its use the period of alcoholism without acute attacks. If there is an acute attack imminent, opium will prevent it, and strychnine then becomes useful in warding off another, and in conducing to a complete cure. There are, however, instances when the drug cannot be used without adding an acute to the chronic poisoning. If there is marked fatty degeneration, a premature senescence of the tissues, failure of mental functions, an arcus senilis, or cardiac degeneration, the tissues cannot be regenerated by this drug. Further, if the organs of elimination do not act normally, there is danger of accident in its use.—*Gazette Hebdomadaire de Médecine et de Chirurgie*, 1897, No. 39, p. 457. (American Journal of the Medical Sciences, October, 1897.)

APHASIA.

We are in the habit of dividing cases of aphasia into two great primary groups or divisions, namely, (*a*) sensory aphasia, and (*b*) motor aphasia. The two chief forms of sensory aphasia are—(1) Word-deafness, and (2) word-blindness; and the two chief forms of motor aphasia which are usually described are—(1) Motor vocal aphasia (aphemia), and (2) motor writing aphasia (agraphia); but there is very great difference of opinion as to

whether agraphia should, strictly speaking, be regarded as a distinct form of aphasia. I do not include mere defects in pantomimic expression under the term aphasia. The fact that an aphasic patient answers questions in pantomime is an important means of testing the condition of the sensory speech centres, and the intellectual faculties of patients suffering from motor aphasia; but inability to express oneself in pantomime should not, in my opinion, be regarded as an aphasic condition, properly so called. Inability to express oneself in pantomime, in answer to spoken or written questions, may be due to (*a*) the fact that the patient does not understand the questions which are put to him; (*b*) that his intellectual faculties, other than his speech faculties, are impaired; and (*c*) that he is suffering from paralysis (functional or organic) of the muscles necessary to produce the pantomimic signs required. Inability to express oneself in pantomime spontaneously may be due to (*b*) and (*c*). Inability to express oneself in pantomime, either spontaneously or in answer to spoken or written questions, does not necessarily show that there is any lesion or defect in the speech mechanisms properly so called. (From Dr. Byrom Bramwell's paper in the Edinburgh Medical Journal, July, 1897.)

CHOREA.

(By Dr. Churton, of Leeds.) In 150 cases of chorea tabulated, it was, with respect to most of them, impossible to reply to the questions—How is the connection of the chorea with rheumatism shown? And even when the patient was admittedly rheumatic, why was the action of the toxin diverted to the brain? A few of the cases, however, showed the localising power of shock in rheumatic patients, thus bringing chorea more sharply into line with arthritis in this respect. *Case 1.*—A man, aged 23 years, had chorea when 11 years old. In June, 1896, he had rheumatism of the knees. After a quarrel chorea began. *Case 2.*—A boy, aged 14 years, had been ill ten weeks with rheumatic fever. A school board officer hurried him to school during convalescence; in a fortnight chorea appeared. *Case 3.*—A boy, aged 9 years, had had rheumatic fever twice. On December 1, 1891, he was startled by a man leaping out of an ash-pit in the dark, and seizing his arm; chorea began next day, and two or three days afterwards arthritis. *Case 4.*—A man, aged 18 years, in October, 1895, had subacute arthritis in the knees after kneeling in wet sand. He had nearly recovered, when he quarrelled violently with a relative; next day chorea appeared in the right face and limbs. Three days after this the right hand was painful and swollen for five days, when the chorea and pain were nearly gone. Another

quarrel then occurred; next day chorea returned in the right hand, and quickly spread through all the limbs. In a girl, aged 18 years, the child of an alcoholic father, overwork in an insanitary house was followed by chorea and arthritis. She became sullen and apparently insane, but recovered under the free administration of port wine, after failure of other means, including inhalation of chloroform with morphia hypodermically. In the cases tabulated there was no instance of chorea primarily caused by chill. (The Lancet, October 30, 1897.)

CHOREA.—Arsenic and Belladonna in.

The following are Dr. Walker Overend's conclusions:—(1) Belladonna appears to be most beneficial in recent cases, and its influence is sometimes very marked in severer forms. (2) In obviously rheumatic cases, arsenic in large doses may be given a trial or may be combined with belladonna from the first. Belladonna may act by diminishing the excitability of the nerve centres, or by imparting an improved tone to their vascular supply. (3) In the wards of a hospital it is perfectly justifiable to give a child as much as thirty minims or more of tincture of belladonna, every four hours, for ten days, or even longer. Certain precautions are necessary. The patient should be kept in bed, and the urine should be daily measured. Small doses of potassium acetate may be added if it becomes much diminished, or if the eyelids show any puffiness. In one child nocturnal incontinence occurred, and the dose was lessened. The occurrence of the papular erythema, which leaves raised circular lumps for a time, does not demand any diminution of the dose. Dryness of the throat and swelling of the parotids, should they occur, are merely temporary. The influence of the belladonna makes itself felt after about four days. Should no visible improvement occur before the tenth day, it would be useless to continue with it. But in all the eight severe cases already referred to, belladonna was of benefit, and is certainly worthy of further trial. As soon as the movements become trivial or occur only during exertion, it is better to omit the belladonna, to begin massage of the affected muscles, and to administer cod-liver oil and syrup of phosphate of iron or other tonics. The use of arsenic may be continued for a week or longer. (New York Medical Journal, August 28, 1897.)

CHOREA IN THE AGED.

Conclusions.—(1) True Sydenham's chorea may occur in advanced life, and may run a short course, terminating in recovery. (2) The majority of cases of chorea occurring late in life run a chronic and progressive course. (3) At the commencement of the disease it is, as a rule, impossible to say whether it will

terminate favourably or become chronic. (4) The movements are generally most marked in the arms; they may begin in the lower extremities, and, rarely, may remain confined thereto. In 20 per cent. of the cases in the table they were unilateral. (5) The mind is normal in three-fifths of the cases in which no hereditary element exists. (6) Rheumatism holds a very subordinate relation to the chorea of late adult life. (7) Endocarditis is comparatively rare, having occurred in only 12·3 per cent. of the cases collected in the table. (8) The anatomic lesions in the fatal cases are not characteristic. (From Dr. Riesman's paper in the American Journal of the Medical Sciences, September, 1897.)

ELECTRICITY IN CEREBRAL HEMIPLEGIA.

Dignat's conclusions may be summarised as follows:—(1) In all cases of cerebral hemiplegia, from whatever cause, electric treatment should not be commenced for some time. (2) Treatment should not be begun before the end of the third week, and should be limited to faradisation during a period of fifteen to twenty days. (3) After this the faradic current should be replaced by a continued current applied to the spinal column. The strength of current should not be more than four to five milliamperes at first, gradually increased to not more than 15 milliamperes. This strength of current should be applied for ten to fifteen minutes, and its direction should be changed once or twice at least during that time. (4) If, after some days, the patient shows signs of improvement, and if there are no symptoms of secondary degeneration, all treatment may be stopped. But it is often well to substitute electric baths to improve the general nutrition. (5) If secondary contractures supervene, it is advisable to continue for a long time the use of the continued current. (6) If epileptic attacks come on, it is best to discontinue all electrical treatment. (From Dr. Stockman's abstract in the Edinburgh Medical Journal, September, 1897.)

EPILEPSY, ALCOHOLIC.

The general characteristic indications of the condition of acute or chronic alcoholism, plus the symptoms of epilepsy in its *petit* or *grand mal*, or equivalent variety, are also the characteristic features of *epilepsia alkoholica*. However, these symptoms do not all appear together. During the paroxysms the epileptic features are easily recognisable, while during the intervals the symptoms of alcoholism may more or less present themselves. In many cases, during long intervals, especially, there are even no characteristic evidences of alcoholism. The *petit* and *grand mal* varieties, the first with a comparatively long-

continued unconsciousness, were the conditions met with in my cases. I have not as yet seen a case of alcoholic epilepsy in the state of the epileptic equivalent. (From Dr. Heinrich Stern's paper in the Medical News, September 18, 1897.)

EPILEPSY.—Treatment of.

Eulenberg, in an interesting paper, prefers a mixture of the bromides, such as two parts of the potassium, two of the sodium, and one of the ammonium salt. He recommends that the mixed bromides should be given in CO_2 water, to lessen the risk of bromism. As regards the dosage, enough should be given not only to lessen the attacks, but to produce a lasting diminution in the excitability of the nerve centres. Rarely less than 75 grains nor more than 150 grains per day will be needed for this purpose. If the fits are wholly by day, then a large dose morning and evening should be given; if wholly nocturnal, a large quantity late in the evening is best; in other cases, a dose morning, afternoon, and evening, shortly after meals. The treatment should be kept up for two or three years after the last seizure. If bromism comes on, he recommends that the general health should be attended to, rather than that the drug should be stopped. If bromides have no effect on the seizures, or excitement is set up, they should not be persisted in, but some other drug should be tried. Many observers are of the opinion that many symptoms of bromism, especially the acne, are due to intestinal sepsis, and if there is any sign of this they advocate the addition of β naphthol, or bismuth salicylate to the bromides. One must not forget the use of arsenic in preventing bromide acne, but care must be taken not to bring about arsenical pigmentation of the skin or arsenical neuritis, in using the drug for long periods. (From Dr. Septimus Reynolds's paper in the Medical Times and Hospital Gazette, May 29, 1897.)

HEADACHE.

A discussion on headaches was introduced before the Hunterian Society, by Dr. Hingston Fox, by a paper in which some of the commoner forms of headaches were described, with special relation to arterial tension. The determination of the tension present rested partly on the sustained character of the pulse, and partly on the accentuation of the second sound of the heart, as heard over the aorta, and in the neck. The headache due to school pressure in childhood was first noticed, a frontal pain relieved by rest and cod-liver oil. In adolescence and young adult life the rheumatic headache, and that due to over-action of the heart, was first spoken of, and their appropriate treatment. The typical headache in anæmia is frontal, and

throbbing, and that due to constipation is similar. In albuminuria, the head pain more often affects the top or back of the head, and is unrelieved by lying down. All the forms of headache treated of so far, are attended with plus tension, and this is true of the majority of cases of migraine. The one-sided pain and other symptoms of the periodic nerve-storm were alluded to, and its frequent occurrence in women of gouty family. Besides the all-important constitutional treatment, cannabis indica was strongly recommended, and several instances given of pushing it to intoxication without harm. The fresh extract was, in the author's opinion, the most useful remedy for headache attended by high tension. After brief notes on epileptic and neuralgic forms, low tension headaches were taken up, especially that of tachycardia, which was contracted with the over-acting heart, already spoken of, where the vessels were tense. Caffeine was the remedy *par excellence* for headaches of low tension. The headache directly due to alcohol, and the congestive form with flushed head, and often amenorrhœa, as well as that caused by cough, all belonging to the low tension group. In middle life heart's disorders cause headaches—in the earlier stages the tension may be raised, in the latter diminished. Mitral stenosis seems to have a characteristic form. Menorrhagia is apt to be similarly attended. The causes of increased vascular tension so common in middle life, both in the well-to-do (gouty) and the poor (from toil and want), were considered, and the headaches consequent on it, as well as the common "bewildering" pain at the vertex about the climacteric spoch. In the old, the steady increase of tension, the senile heart, and the asthenic dilated heart at a later stage, bring their own head discomforts, which are relieved by treatment on general principles. Instances of the great value of aperient saline in the plus tension of old age were given. It was submitted, in conclusion, that the state of the blood pressure was an important factor in many forms of headache, and a guide to treatment; amongst specific remedies, cannabis for the high and caffeine for the low tension pains being accounted of most value. (The Medical Press, May 12, 1897.)

HEMICRANIA.—Treatment of.

Buxbaum states (*Bl. f. klin. Hydrotherap.*, Wien.) that the following method of treatment has given him excellent curative results in many obstinate cases of hemicrania. He explains that he does not regard it as a specific, seeing that hemicrania arises from many causes, and that its pathogenesis is very obscure; that the actual cause of the severe pain is unknown; and that it is undecided whether the vasomotor phenomena which accompany an attack are secondary and reflex in character

and origin, or depend on a primary involvement of the sympathetic nervous system. The remedy, although, like all others, empiric, is well worth a trial in cases which have hitherto resisted other treatment. The patient is put in a wet-pack for one to one and a half hours, and is then energetically rubbed down, the whole procedure exercising a marked effect on the vasomotor centre and system, which effect becomes permanent after continued application. Two cases are detailed at length by the author, the first of which had lasted for fifteen years; treatment was carried out forty-six times in fifty-six days, after which the cure has been permanent. The second case was cured in twenty-one days. In one case the attacks returned in six months consequent on influenza, but a second course of treatment has resulted in permanent cure. (Abstract in Edinburgh Medical Journal, May, 1897.)

HEMIPLEGIA.—Prognosis in.

Lodor (*Medicine*, October, 1897) says there are three points which, when taken together, give a fair indication of the permanency of the paralysis in hemiplegia. They are the voluntary motor power of the patient, the spastic rigidity, and the increased reflexes. To reduce the problem to almost a mathematic level, let it be supposed that the fibres composing the pyramidal tract of one side number one hundred. Suppose that ten of the fibres are destroyed by degeneration subsequent to hemorrhage. If such be the case, after a lapse of three to six months, the patient should have recovered nine-tenths of his original power, with the increase in reflex represented by one-tenth, and the rigidity or spastic condition scarcely noticeable. On the other hand, suppose that the reflexes are exaggerated one-tenth, the voluntary power reduced to zero, and no rigidity. With such a condition, it is fair to suppose that nine-tenths of the fibres are intact and out of the reach of the patient's will, either from former pressure of the clot, or from long disuse, and that recovery may take place to the extent of nine-tenths of the former power. Again, suppose the patient presents the following points:—Motor force reduced to one-tenth, reflex markedly increased, and rigidity great. With such symptoms, it is fair to presume that nine-tenths of the fibres have been destroyed, and further recovery cannot take place. These points are to be relied upon with almost mathematic precision. (Medical News, November 6, 1897.)

HEMORRHAGE, CEREBRAL.

A great deal can in many cases be done to prevent and defer a second rupture. Everything which is likely to act as an exciting cause should, so far as possible, be avoided. It is especially important to reduce the blood pressure when the

pulse tension is excessive, and to avoid everything, such as sudden efforts, mental excitement, sudden exposure to cold, straining at stool, &c., which is apt to produce a rapid rise in the intracranial blood pressure. A patient who has had an attack of cerebral hemorrhage, however slight, should lead a quiet routine life; he should be made to realise that he is not the man he was before. If he is a business man, more especially if his business entails much bodily exertion, mental strain, or excitement, he should be advised to give it up if he can by any possibility do so. The diet should be light and nutritious; if the patient is gouty, if his kidneys are cirrhotic, if his blood pressure is high, a non-nitrogenous diet is best; in such cases iodide of potassium, salicylate of soda, &c., may be given internally. In these cases, and, in fact, in almost all cases in which a cerebral hemorrhage has occurred, alcohol should be prohibited. A certain amount of tobacco, however, may be allowed. Care should be taken that the skin and bowels functionate regularly and actively. The patient should be well clothed. He should not be allowed to suddenly expose himself to cold, more especially after being in a warm atmosphere. When the arteries are atheromatous, special care must, of course, be taken to avoid any sudden exertion or strain. The amount of exercise which the patient should be permitted to take depends, of course, upon circumstances. So far as the condition of his general health is concerned, a certain amount of gentle walking (outdoor) exercise is beneficial; but sudden exertions, running for trains, straining at stool, &c., anything which produces over fatigue, anything which places a sudden strain on the cerebral vessels, and in this connection mental agitation and excitement is probably quite as prejudicial as too violent physical exertion, should be rigidly avoided. (From Dr. Byrom Bramwell's paper in Treatment, July 8, 1897.)

HYPNOTISM AS A CAUSE OF DISEASE.

The danger of amateur hypnotism is well shown by a case mentioned by Desplats (*Journal des sciences médicales de Lille*, July 10, 1897; *Gazette médicale de Nantes*, September 11, 1897), that of a baker's apprentice who was put to sleep daily by a physician, for his amusement. The lad became hysterical, and had grave crises with attacks of ambulatory automatism. The most varied impressions, the sight of a brilliant object, or of a person, or hearing a sound, would put him to sleep. He became a veritable automaton, physically infirm. (New York Medical Journal, October 9, 1897.)

HYSTERIA IN EARLY LIFE.

In *Pediatrics*, of August 1, is a paper of much interest by Dr. Eshner on this important subject. Ideas concerning that

form of neurosis known as hysteria have undergone a revolution, and the widespread belief that women alone were subject to this disease, though not quite extinct in the minds of some, has by the great majority been relegated to the limbo of the past. The French school, and especially Charcot, must be thanked for our improved knowledge of hysteria, and it may now be said to be a well-recognised fact that hysteria may attack men and even quite young children. When it occurs in infants the cause is, according to the English school, due to hereditary neurosis. Hysterical affections are often found at an early age in children of a neurotic predisposition. Clouston says in hysterical cases occurring in children, there is no doubt "a pathologically premature development of the emotional brain centres due to bad heredity, and this is sometimes accompanied by a premature sexual development." Dr. Eshner says that the disorder has a pathology of its own, as he believes the results of future investigations will demonstrate; but as yet we need more knowledge, especially in the domain of physiological and pathological chemistry, before we may hope for a solution of this aspect of the problem. Dr. Eshner reports eight cases in his paper, which, although not all quite typical, possess instructive features. (Medical Record, October 16, 1897.)

LOCOMOTOR ATAXIA.—Treatment of.

(From M. Grasset's paper, before the Moscow Congress.) Tabes is rarely curable, but frequently the position of the patient can be notably improved. Schultz, Privat, Erb, Hammond have published such cases, and the author himself had observed two very remarkable examples. In any case, remissions were frequent. In spite, however, of the pathological anatomy of sclerosis of the spinal cord, and of its discouraging conclusions, the treatment of the malady was worth discussing. The specific treatment was recommended by many medical men; it could improve the condition, but it did not cure. Where syphilis had been the primary cause, and that affection had been insufficiently treated, the mixed treatment should be tried for three months: mercury ointment rubbed in along the vertebral column or injections of calomel. Where arthritism was suspected, the alkaline and iodide treatment should be prescribed. The first ten days, for instance, of each month, ten grains of iodide of potassium at each of the two principal repasts, and a wafer containing salol and bicarbonate of soda, ten grains each. The ten following days, 10 grains of salicylate of lithine in solution, at each meal, in a wine-glass of Vichy water. The ten last days of the month, five drops of Fowler's solution twice a day, or a wafer of ten grains of flowers of sulphur. A season at Lamalou should, in these cases, be always

ordered. Besides the medical treatment, the patient should be warned against any excess, and more especially against sexual excess. He should avoid alcohol and tobacco, and live quietly in some retired country place, away from every political or professional excitement. So much for the general treatment. As to that of the special lesions of tabes, Prof. Grasset considered that sclerosis should be treated by iodide of potassium, at the dose of ten grains twice a day, in milk or beer. If that drug was not well tolerated, it should be replaced by tincture of iodine, five or six drops twice a day in milk. This treatment should be continued several months, with a rest of ten days each month. The diet of the patient was important to attend to. All surgical attempts at stretching the nerves or the medulla should be forbidden. However, he would admit suspension or forcible flexion as recommended by Chipault. The fulginating pains might be treated by opium or antipyrine, and asthenia by tonics (glycérophates). The organic treatment of Brown Séquard was almost abandoned. Massage, hydrotherapy, and sulphurous waters were indicated where the tabes was exclusively motor. The treatment of Fraenkel, which consisted in a re-education of the muscles by systematic automatic movements, had rendered some service. The moral treatment should not be forgotten, for nearly all the symptoms of ataxic patients were dominated by psychical elements, that was to say, that the symptoms were due, in a great part, to perversion of the conscience and the imagination. More than once have patients lost nearly all their nervous sensations by simple injections of sterilised water, believing that they were being treated by organic extracts, and, in other cases, horizontal suspension, which naturally could have no effect on the spinal cord, considerably improved those on whom it was tried. Professor Grasset concluded his paper by citing the words of Ballet, "When a medical man treats an ataxic, he must forget that he is an anatomo-pathologist, to become somewhat psychologist." (From report in the Medical Press and Circular, September 8, 1897.)

LOCOMOTOR ATAXIA, METHYLENE BLUE IN THE PAINS OF.

The *Gazette hebdomadaire de médecine et de chirurgie* for June 17, publishes a report of a recent meeting of the Société de biologie, at which M. Lemoine stated that he had experimented with this drug in nine cases with the following results:—In two cases no amelioration was obtained; in five cases the intensity and the frequency of the pains were greatly diminished; and in two cases there was complete and prolonged cessation of the pain. The pains which yielded the most quickly under the action of

the methylene blue were the shooting pains of the limbs and the girdle pains. The pains which were the most refractory were the visceral pains, especially those in the stomach and in the rectum. The vesical pains disappeared rather more quickly. The two patients in whom the treatment entirely failed had presented gastric pains to the exclusion of all others. The effect of methylene blue was very rapid, and the diminution of pain occurred two or three hours after the urine was coloured blue. One advantage of this treatment, M. Lemoine said, was that the effects persisted for several days after the patient stopped taking the drug, and even for several weeks. Not only, then, did this treatment produce quieting effects almost immediately, but the results were lasting. (New York Medical Journal, July 10, 1897.)

LUMBAGO, DRY CUPPING IN.

We have in dry cupping one of the most rapid and powerful means of removing somewhat deep-seated congestions and hyperæmia, and of alleviating or curing certain pains and conditions which are far less efficiently treated by liniments and by other forms of counter-irritation. Rheumatism may doubtless affect the lumbar muscles, but that ordinary attacks of lumbago, or the similar pains which affect the interscapular and other muscles, have anything to do with rheumatism properly so called, I beg to deny. It does not occur at all frequently, or specially, in those who suffer from true rheumatism; it often occurs in those who never had an attack of general rheumatism, or even a pain in a single joint; it is not associated with any derangement of the urinary secretion; its onslaught generally, and its cessation often, are utterly unlike those of rheumatism, for the latter usually comes on and ceases slowly, while the onset of lumbago is frequently instantaneous, as from an awkward position, strain, &c., and its termination is occasionally almost as rapid; and, finally, dry cupping will sometimes cure lumbago as by magic, while it would have a sorry chance, I fear, against rheumatism. A man, for instance, previously feeling perfectly well, is seized, while pulling on his boot, with a pain, which grips him across the loins like a tiger's paw; to stand up or move one iota from his chair, becomes an instant impossibility; the pain, liniments and frictions and hot baths notwithstanding, may thenceforwards last, though modified, for days or more. Hot ironing the part is an excellent remedy; but dry cupping over the affected muscles sometimes achieves a miracle—the patient can forthwith get up, march, and attend to his work.—Charles J. Hare, "Good Remedies—Out of Fashion." (Practitioner, September, 1897.)

MELANCHOLIA.—Cured by Operative Treatment.

Mr. Street and Mr. Damer Harrison (*Liverpool Medico-Chirurgic Journal*, July, 1897, p. 417) relate a case in which the patient had for two years suffered from hallucinations of hearing. He became depressed, sleepless, and took to drink. The voices heard were those of friends far away, and they goaded him on to destroy himself in order to avoid disgrace. He had constant headache on the left side, and had attempted to cut his throat. Mr. Harrison trephined, making a large opening over the centre for hearing, and found a serous cyst, which he drained. The patient completely recovered. (Abstract in Treatment, September 29, 1897.)

Melancholia.—Treatment of.

In discussing the treatment of cases of melancholia, Pritchard (*New York Polyclinic*) says that if the domestic situation can be controlled by the family physician, the patient should most emphatically be treated at home. Nearly all such patients are appreciatively cognisant of their surroundings, and hence great harm is done by incarceration and association in an institution with others who are insane. In treating these patients at home, two conditions should be demanded by the attending physician, positively and imperatively:—First, absolute control over the patient's personal and domestic life; and, second, the constant presence of an attendant, preferably one who has had special training. As a rule, the patient should be isolated from the rest of the family, leaving the personal influence and domination of the physician and nurse free from interference. The patient's room should be changed in both location and furnishings. In the debilitated cases, partial enforced rest should be obtained by requiring the patient to lie abed until ten, eleven, or twelve o'clock in the morning. The diet should be nutritious and quite sufficient. If, through delusions, or in an effort to commit suicide in this way, the patient refuses to eat, enforced feeding should be resorted to by rectum or mouth, or, if resistance is excessive, by means of a catheter introduced through the nose. The drug treatment resolves itself into three indications:—(1) The relief of insomnia; (2) the correction of visceral derangement and disturbed secretions; and (3) the relief of psychic pain. For insomnia, the author prefers trional above all other drugs, and says that it is free from injurious or disagreeable effects, and is more certainly reliable than any other. The dose should be from 10 to 20 grains, in water, shortly before retiring. It may be combined with an equal quantity of sodium or potassium bromide. It does not seem to lose its hypnotic action even after prolonged continuance, nor does it tend to establish any drug habit. Occasionally the sleep induced from a full dose is alarmingly prolonged, but this

is a rare idiosyncrasy of no harmful significance. He calls attention to the importance of removing auto-infection of the gastro-intestinal tract, by the administration of laxatives (cascara sagrada, decimal doses of calomel, &c.) and intestinal antiseptics (bismuth subgallate, salol, &c.), and of relieving psychic pain by opium, in the form of the aqueous extract, in doses of $\frac{1}{8}$ to $\frac{1}{3}$ of a grain three or four times daily. (Medical News, October 16, 1897.)

MULTIPLE SCLEROSIS.—The Etiology of.

The account of these investigations, based upon a clinical study of twenty-nine cases observed in Gerhardt's clinic, at the University of Berlin, is published in the *Deutsche medicinische Wochenschrift*, of July 8, 1897. Of the twenty-nine cases studied, twenty-three occurred in males, six in females. Twenty-two were between the ages of twenty and forty, and seven between forty and sixty. In some the first symptoms were noticed early in life. A number of the patients had suffered from infectious diseases during childhood; but in only one of all the cases was there any direct relation between the infection and the nervous disorder. This case occurred in a man of 25, in whom the symptoms of multiple sclerosis developed in the sequence of an attack of influenza. In only one of the cases could a history of syphilis be elicited with certainty; in three a doubtful history of this kind was obtained. In six of the cases there existed the possibility of intoxication as an etiological factor. Two patients were addicted to alcoholic excess, but in both instances other causative influences might have been operative. One patient had suffered from carbon-monoxide poisoning nine years before the advent of his nervous symptoms. Three patients had been exposed to industrial intoxications. Two of these were painters, who had, however, never exhibited other symptoms of plumbism. In one there had been chronic suppurative disease of the ear from childhood, together with eye changes suggestive of multiple sclerosis prior to exposure to lead. In the other, the first symptoms of nervous disorder followed immediately upon traumatism. One patient was occupied in exhausting glass bulbs employed for incandescent electric lighting, and had suffered from mercurial intoxication. In nine cases the patients attributed their trouble to grief and over-exertion, but in five of these there existed the possibility of other etiological influences. In all of the cases special inquiry was directed to the influence of traumatism in causing the nervous affection; and in eleven cases positive evidence of this nature was secured. In the remaining five the presence of other etiological possibilities and the length of time between the two events, caused doubt as to the relation between the injury and

the disease of the brain and cord. This study shows that there is no constant, universal cause for multiple sclerosis. In some cases the mode of origin escapes recognition. In others there are three main groups of exciting causes, viz., acute infectious diseases, intoxications, and traumatism. (From a leader in the Medical Record, July 31, 1897.)

NEURITIS.

(1) Sciatica is most probably always a neuritis, and often traumatic, *e.g.*, due to much driving on a hard seat. In this connection note the frequent occurrence of some degree of wasting of the muscles, loss of sensation, &c., after the attacks. (2) Old writers confused hip-disease and sciatica; Cotunnius of Naples, the discoverer of neuralgia in general, first pointed out the distinction. (3) Loss of knee-jerks may be the sole sign of post-diphtheritic neuritis. In one case it occurred where the jerk was known to have been previously very well marked; there had been abundant discharge of membrane from the trachea, the fauces and larynx being unaffected. (4) Pain must, as a rule, be regarded as a contra-indication in the use of massage, inasmuch as it usually betokens downright irritation of the nerves. (5) In cases of muscular wasting, where the muscles are nicely antagonised, as they are at the ankle-joint, galvanism must be used with great caution, if at all. For by it you may do more harm than good, improving the nutrition of the antagonistic (unaffected) muscles out of proportion to any improvement resulting to those that are wasted. In this way a deformity may be produced, or one which existed before may be increased. So far as I know, the employment of massage in such a case does not entail a similar risk. (From Dr. Gee's Clinical Aphorisms, collected by Mr. T. J. Horder, in the St. Bartholomew's Hospital Reports, xxxii., 1897.)

NEURITIS IN INFLUENZA.

The following conclusions are taken from Dr. Herman B. Allyn's paper, in the *Journal of the American Medical Association*, July 24, 1897:—(1) Influenza, like other infectious diseases, may be followed by neuritis and multiple neuritis. (2) One sex does not seem to be more liable to multiple neuritis than the other. (3) It occurs most frequently between the twenty-fifth and forty-fifth years; and appears during convalescence, in a few days or two or three weeks after the influenza has subsided. (4) It may present sensory, motor, vasomotor, or trophic symptoms, or all combined, but sensory and vasomotor symptoms are more prominent than in diphtheritic and some other causes of multiple neuritis. (5) The great majority of the cases recover, both as regards restoration of function and power, as well as regards life. Five of thirty-six cases died. In one of Bruns'

cases the symptoms resembled Landry's paralysis, in the other there was paralysis of the tongue and throat. In Eisenlohr's fatal cases there was general motor paralysis, with intense hyperæsthesia of the skin. In Ferguson's case the neuritis was visceral, and in Leyden's fatal case there was coincident disease of the cord. (6) Recovery does not usually take place under four weeks, and may be delayed for months. (7) Treatment should consist first of absolute rest in bed. Anodynes must be given in sufficient dose to relieve pain, when that is a prominent symptom. Morphine hypodermically may be necessary, but may be often substituted with advantage by codeine. The antipyretic anodynes are insufficient in any safe dose, if the patient has pains for many days. The salicylate of cinchonidine is distinctly valuable, especially when the pain is not of the greatest intensity. At a later stage, potassium iodide and the bichloride of mercury in small doses are helpful. When the pain is in an extremity, firm pressure with a flannel bandage gives great comfort. Blisters over the painful nerve trunks, when they are superficial, are also valuable in relieving pain. Close watch must be kept on the action of the heart and the character of the breathing. Most of the fatal cases die through paralysis of the diaphragm. The closest attention must be given throughout the course of the case to the nutrition of the patient and to the condition of the skin, especially over portions of the body where pressure occurs. As far as possible, the stomach should be reserved for food. Medicine in these cases acts better when given hypodermically, and the stomach is not so likely to be deranged. This caution applies especially to the giving of anodynes. (8) Finally, while I think diphtheria as a cause can be excluded in the cases which I have seen, both from the absence of any clinical evidence of it in the patient or his surroundings, and from the fact that diphtheritic neuritis is almost purely motor, yet I cannot exclude the poison concerned in the production of follicular tonsillitis—infectious tonsillitis—for sometimes this is associated with influenza, and it may produce as much headache, backache, and prostration as usually characterise the onset of influenza itself.

PARALYSIS, GENERAL.

It is the stage of remission in general paresis which is responsible for most of the mistakes of diagnosis and prognosis that are made in this disorder, as only the trained observer can find evidences of mental failure in many of these patients, who at this stage appear to be entirely well. That, however, an exacerbation is sure to follow sooner or later, in spite of this apparent return to health, and that only by the most careful and quiet living can it be long delayed, is the only opinion to

be given that is consistent with fact. It is often months, and occasionally years, before the signs of degeneration recommence and our reiterated prognosis is finally verified. (From Dr. Stedman's paper in the Boston Medical and Surgical Journal, June 10, 1897.)

Paralysis, General.—Active Treatment in.

During the past three years a number of cases of general paralysis (and it should be said that most of them were in the advanced stages of the disease) have been taken from the general wards of the Government Hospital at Washington, D.C., and placed in the Toner Building, an infirmary under the care of Dr. Geo. W. Foster, where they have received active treatment. The main therapeutic agent has been the cold, wet pack, always accompanied by cold to the head in the form of icebag or wet towel. The duration of the pack is from one to three hours, details of covering, need for artificial heat or cold being always determined by use of thermometer. The pack is followed by massage, and sometimes by a brief douche. This treatment need not interfere with special treatment, such as iodide or mercurial inunctions, or whatever the individual case may seem to require. Whatever may be the permanent effect of the wet pack on the cerebral tissues in general paralysis, there is generally marked benefit in calming present excitement, promoting sleep, removing suddenly occurring mental confusion, and excitement of vascular origin. (From Dr. Godding's paper in the British Medical Journal, November 13, 1897.)

Paralysis, General.—The Terminal Period of.

(By Arnaud, *Archives de Neurologie*, June, 1897). At this stage of general paralysis, this writer recognises two varieties. Many paralytics become progressively enfeebled, and finally lose, a greater or shorter length of time previous to death, the power of walking or maintaining the upright posture; but a certain proportion—one half, it is estimated—remain unconfined to bed, and preserve up to death a liberty of movement sufficiently great to enable them to go about. These two categories are distinguished principally by the precocious appearance in the first of muscular rigidity, pronounced spasms, and more or less permanent contractures, while in the second these symptoms are wanting, or are present only in a very feeble degree. Further, cerebral seizures play an important part in the death of paralytics; they are the natural and most frequent cause. As to trophic troubles, the writer thinks that the most part will become exceptional when it is recognised that they are not a necessary part of the disease, and that they can ordinarily be prevented. (Dr. Stewart's abstract in the Glasgow Medical Journal, July, 1897.)

PARALYSIS OF THE FOREARM FROM BICYCLING.

Dr. Destot has published, in the *Gazette des Hôpitaux*, an account of his own experiences. An abstract of the paper appears in a recently published number of the *Neurologisches Centralblatt*. After a long ride he experienced paræsthesia in the fourth and fifth fingers, with impaired sensibility and paresis in the interossei, lumbricales, and the adductor pollicis. The paresis was followed by distinct atrophy in the affected muscles. He considers the affection to be the result of pressure upon the branches of the ulnar nerve, aggravated, doubtless, by the vibration occasioned by bad roads. He also considers that predisposing factors existed in the softness of the skin of the hand and in the exhaustion of the muscles, and the consequent loss of protection to the nerves lying in or under them. (Journal of the American Medical Association, July 10, 1897.)

PARALDEHYDE DELIRIUM TREMENS.

Dr. G. Reinhold reports a single instance of this rare condition. A man, 41 years of age, was taking two ounces of this drug each day. He could stand with difficulty, and although his intelligence was not impaired, his speech was laboured, and words were delivered in syllables in order to improve this deficiency. His nutrition was enfeebled, skin pale, and brow covered with perspiration. The eyeballs were deeply sunken, without disturbance of motion, and his look was fixed. The pupils were in mid-dilatation, but reacted well to light. There were no painful points on head or spine. There was marked tremor of hands and tongue, which was coated. Spinal innervation was unchanged. The lungs showed marked emphysema; the apex-beat was absent; the heart sounds muffled; the pulmonic second sound accentuated; the pulse slightly irregular, ninety to the minute, and moderately full. The abdomen was retracted. The urine was very acid, contained a large quantity of urates, of a specific gravity of 1030, but free from albumen and sugar. The patient was sleepless, became delirious, had ideas of persecution and hallucinations, but improved under sodium bromide and trional, and finally was discharged after sixteen days of observation.—*Therapeutische Monatshefte*, 1897, Heft 6, S. 300. (American Journal of the Medical Sciences, November, 1897.)

POLYNEURITIS.—Treatment of.

According to a writer in the *Journal des praticiens*, for September 11, the therapeutic indications are as follows:—(1) To combat the painful manifestations:—Morphine in subcutaneous injections; antipyrine, sodium salicylate, even in

cases in which rheumatism is not manifested; salophene in amounts of from sixty to ninety grains a day, in capsules containing fifteen grains; methylene blue, because of its elective affinity for the medulla of the nervous fibres; carbolic acid in lotions on the painful parts, also in compresses saturated in a 4 or 5 per cent. solution. Subcutaneous injections of carbolic acid and morphine combined near the superficial nerves, have been recommended. A 2 per cent. solution of the carbolic acid is combined with a 1 per cent. solution of the morphine, and the amount to be injected at a time is a cubic centimetre. These injections are more particularly indicated in infectious polyneuritis. Hydrotherapy, especially at the acute period, may be useful according to Pospischil's procedure. (2) For insomnia, the association of potassium bromide and morphine is an excellent thing; but when symptoms such as cardiac tachycardia, &c., are observed, showing the invasion of the vagus nerve, morphine is contraindicated, and it is preferable to employ chloralose, sulphonal, or trional; paraldehyde is a soporific of choice, especially in alcoholic neuritis; chloral should be prescribed carefully and in moderation, because of its depressing action on the heart. (3) In paralysis of the cranio-bulbar nerves, prompt and energetic action is demanded, and here the treatment consists in subcutaneous injections of caffeine, ether, or camphor; faradaic excitation of the vagus nerve at the neck is also to be employed. When the extension of paralysis to the organs of respiration is marked by grave symptoms of dyspnœa and cyanosis, the following means may be employed:—Mustard plasters, thrashing the body with cold linen cloths, deep and superficial faradisation, inhalations of oxygen, and subcutaneous injections of strychnine, in order to stimulate the bulbar centres. (4) In case of deformities following defective attitudes and tendinous retractions, gutters intended to restore the segments of the limbers to a physiological attitude should be employed. (5) In order to hasten the nutrition of the nerves and the muscles, galvanisation of the medulla, plain hot baths, salt baths, and subcutaneous injections of strychnine, not exceeding a milligramme at a time, should be resorted to. Functional restoration consists in arousing contractility of the muscles where it is almost destroyed, in effecting a sort of "re-education" of the muscles by varied exercises, and by progressive movements of the fingers, the hands, or the feet. When the patients are convalescent, hydrotherapy is indicated. (6) Deformities of the limbs after recovery from polyneuritis may require the tendons to be cut. In this case surgery is employed, and the tendons are cut. (From astract in the New York Medical Journal, October 16, 1897.)

SCIATICA.—Treatment of.

Dr. Albert Robin calls especial attention to the use of hypodermatic injections of sodium glycerophosphate, 1, in distilled water, 4. As alternatives he offers the following formulæ:—(1) Calcium, magnesium, and potassium glycerophosphates, of each, ·04; sodium glycerophosphate, 13; and (2) iron glycerophosphate, ·05; calcium, magnesium, and potassium glycerophosphate, of each, ·08. Of the three formulas he prefers the first, which is less irritating. The others are more active, but cause marked pain. He generally commences with twelve minims, which is usually sufficient; if necessary, doubling the dose. The solutions should be prepared in small quantities as needed, but can be preserved in small, sterilised bottles, each containing a single dose. All aseptic precautions should be observed, and the injections should be made deeply *in loco dolenti*, and successively along the course of the nerve, so far as it is painful. The pain may not yield after the first nor the second, but will after a series of injections. The cure is usually complete and persistent.—*Bulletin Général de Thérapeutique*, 1897, 10e liv., p. 433. (American Journal of the Medical Sciences, November, 1897.)

SLEEP.—New Method of Inducing.

Lying upon my back, with or without pillow, I reach for the foot-board and head-board at the same time. This brings into use many muscles that have not been on active duty during the day. I now raise the head half an inch, enough to realise that it has more weight than I at first supposed. At the same time, by will power, I direct the respiratory process to a slower and deeper movement. I order about eight inspirations deep and full, in place of sixteen per minute. Every inspiration is recorded, counted. Thus the process begins of inviting the forces into new channels, and relieving the old. At the expiration of ten to twenty inspirations, the head has become so heavy you want to drop it. This you do. Immediately the right foot is raised a half inch from its resting place. The reach for the foot-board and head-board continues; the count of slow deep inspirations continues; the sense of fatigue of muscles engaged in lifting the foot and holding up the coverings continues. Here, as before, the foot, like the head, has become a dead weight, and must go down. Now, immediately the left foot is elevated, with all the previous conditions remaining. The reach downward and upward of foot and head is kept up, so far as power will permit without exhaustion. This foot remains up for the same length of time, the respirations being the clockwork. It goes down. You may now relieve the reach for foot- and head-board, and use the muscle to elevate the

trunk, holding it by resting upon heels and head and shoulders. This elevation of the central part of the body and rest upon the two extremes will call for change, as all the former positions have done. By the same clock you have the time marked off, and the body is again flat upon the back, waiting new orders. Turn now to the right side, reaching for head- and foot-board as before, and elevate the head half an inch by use of the lateral muscles of the neck and chest. At the expiration of the time the head goes down and the foot goes up by use of the lateral muscles. Change now to the left side and repeat what has just been accomplished by the muscles of the opposite side. You have now assumed eight positions, and used a large majority of the whole number of muscles in carrying out your dictations. If you have not fallen asleep before this cycle is completed, you may begin again and go over the same round. If you have already gone to sleep you will not be required to. Some conditions of heart or nerve centre may altogether contra-indicate this method. (From Dr. Learned's paper in the Journal of the American Medical Association, September 25, 1897.)

SPASTIC PARALYSIS.—Tenotomy in.

Mr. J. Jackson Clarke puts down the indications as follows:— Before deciding to undertake the operative treatment of any case, various factors have to be weighed. In the first place, the condition of the intellectual faculties must be considered. Often the mind is altogether vacant, and in such cases it is not worth while to rectify malpositions. Sometimes the condition is complicated by bilateral athetosis (general chorea), and this may be taken as a distinct contraindication. Epilepsy is a somewhat rare complication, and would also be an argument for non-interference. General rigidity renders improvement of the condition of the legs of but little service to the patient. In diagnosis the cases of infantile cerebral degeneration with symmetrical changes at the macula, first observed by Waren Tay, and recently described by Kingdon and Risien Russell, must be borne in mind. Such cases begin in infancy, and end fatally about the end of the second year. They are marked by progressive paralysis and some rigidity. The paraplegic forms of spastic paralysis are the more amenable to treatment, especially when the chief part of the disability consists in spastic club-foot. Such cases give complete satisfaction to all concerned. (The Lancet, October 9, 1897.)

SPINAL PUNCTURE.

At the Berlin Congress for Medicine, Hr. Lenhardt said that, as regarded the value of the procedure in diagnosis, he had tables of forty-six cases of primary cerebro-spinal meningitis

that could prove its value. In the majority of cases of tuberculous meningitis, tubercle bacilli were found, but in a considerable number they were not. Out of his forty-six cases, tubercle bacilli were found in twenty-one only. In twenty-two cases of primary epidemic cerebro-spinal meningitis, thirteen times Weichselbaum's, and in nine Frænkel's diplococcus was found. From February 20 to February 27, four cases took ill, and died in a few days; three of the cases were caused by Frænkel's diplococcus, and only one by Weichselbaum's. Hr. Fürbringer, Berlin, treated the subject from a clinical side. In twenty-six cases of tuberculous meningitis, he had found bacilli fourteen times. This was not of great practical value to the practitioner, as the investigation required a long time, and the diagnosis could be determined with equal certainty from the symptoms. It was different with cerebral hemorrhage, as here puncture would show any necessity for surgical procedures. Many cases had been saved by this, as when an almost entirely bloody fluid was found, the skull could be opened, and the hæmatoma removed. As regarded the operation itself, the puncture was always made in the sacro-lumbar space, in the middle line, and with the patient bent forwards. Not unfrequently headache increased during and after puncture. (From report in the Medical Press and Circular, September 1, 1897.)

SPINE, FRACTURE OF.

Poller (*Langenbeck's Archives*, Bd. liv., Hft. 2) favours treatment by immediate reduction of displacement under chloroform. While assistants make strong and steady traction from the head and feet, the surgeon manipulates the distorted portion of the spine into position. In some cases the bones could be felt to slide or spring into apposition. In 22 of his patients this method was adopted, without in any case being followed by paresis or anæsthesia. In one case where motion and sensation were abolished, the reposition of parts immediately restored these functions. He lays stress on the importance of keeping patients for at least two months absolutely at rest in bed, great care being taken to prevent bedsores or infection of the bladder when the catheter is necessary. After the bones have united, traction is made daily on the spine, and when this extension can be borne for half an hour at a time, a plaster jacket is applied, and the patient allowed to use crutches. It is advised not to hurry patients out of bed too soon, as slow inflammatory conditions are apt to be set up, followed by deformity. Electricity, massage, and douches are of value in keeping up the tone of the muscles. By adopting this line of treatment, operation can often be dispensed with. The results of operative interference in cases where a

diagnosis cannot with certainty be made between compression and complete rupture of the cord, or in cases where less heroic measures have failed, are, on the whole, satisfactory. Chipault collected 164 cases of fracture operated upon, with 12 cases cured, 26 improved, 46 not improved, and 80 fatal. Lloyd gives the mortality at 25 per cent. So far as the operation itself goes, the only danger is sepsis, hemorrhage and shock being much less serious risks than was formerly supposed. By careful manipulation the cord can be freely handled without harm resulting. (From *resumé* in The Hospital, November 20, 1897.)

TOUCH PARALYSIS.

Cases of cerebral disease are occasionally met with, in which there is either no tactile anæsthesia whatsoever in the fingers or hands, or, if present, the impairment of tactile sensibility is exceedingly slight, and yet the patient is quite unable to tell the nature of objects placed in the hand when the eyes are closed. For example, a coin placed in the hand is felt at once, but the patient cannot tell what it is. [The details of the two illustrative cases of touch paralysis are omitted.] In the first case, it appears probable that there was a small gumma or other syphilitic lesion implicating the cortex of the brain on the right side, near the arm centre, and beneath the part of the skull which was tender on percussion. This tender area corresponded to the region of the supra-marginal convolution and the middle of the ascending parietal convolution. In the second case, it appears probable from the history that there had been embolism of the left middle cerebral artery, and, as a result, hemiplegia of sudden onset. All the signs of hemiplegia had passed away with the exception of the slightest impairment of the grasp of the right hand, and the symptom described. (From Dr. Williamson's paper in the British Medical Journal, September 25, 1897.)

TUMOUR, CEREBRAL.—Treatment of.

There are two classes of cases of intracranial tumour that we are in the habit of submitting to the surgeon; in the one it is with the hope that it may be possible to remove the tumour, and thus save the patient's life, as well as his sight; and in the other it is with the conviction that the disease is too extensive to allow of its removal, but with the hope that relief of intracranial pressure may relieve distressing symptoms, prolong life, and save sight. The most important question with which we are confronted when attempting to decide whether we ought to recommend surgical interference in either class of cases, is as to what the risk to life is as compared to the advantages to be gained by the operation. With our improved surgical methods and appliances, in skilled hands, it appears to me that the

question ought not to be long in doubt in connection with the first class of cases; indeed, I regard it as our duty to recommend such interference as soon as we have given antisyphilitic treatment a fair trial, by which is meant a trial for six weeks, as has been recommended by Victor Horsley, or where there are grounds for supposing that the disease is of a tuberculous nature, after we have treated the patient with cod-liver oil, arsenic, and similar remedies, for three or four months. In the second class of cases, among the advantages to be gained by surgical operation is the chance of saving sight, when this has not already been lost, which ought, I consider, to influence us in favour of such a procedure. On the other hand, the presence of atrophic changes of the nerves, of such a degree that little hope can be entertained of saving sight by the relief of intracranial pressure, makes it much more doubtful whether the other advantages to be gained are sufficient to justify the risk of terminating or shortening the patient's existence by the operation. (From Dr. Risien Russell's paper on "Cerebral Tumour and Optic Neuritis," in Treatment, September 9, 1897.)

Tumour, Cerebral.—Diagnosis of.

The diagnosis of brain tumour is, in the majority of the cases, a matter of little difficulty, yet every year cases are observed and reported in which it has been impossible. The simultaneous existence of headache, severe and persistent, of vertigo and tinnitus aurium, of vomiting, of optic neuritis or atrophy, and of general convulsions, point directly to a brain tumour. When that tumour is located in the well-known motor or sensory or speech areas of the cortex, or in the course of their tracts, there are clear indications of its position. It is a very encouraging fact that the parts of the brain in which tumours cause marked local symptoms are the very parts which are open to the surgeon for exploration. The chief localising signs of brain disease are spasms and paralysis, disturbances of speech and of sight. A localised spasm, associated with numbness beginning in one limb and extending to others in a definite sequence, and usually followed by a temporary paralysis known as Jacksonian epilepsy, and differing from ordinary epilepsy in the fact that consciousness is not lost, is the most important of all local symptoms. It points to the motor area of the cortex, about the fissure of Rolando, as the site of the lesion, an area easily accessible at operation. Disturbances of speech, either in the form of sudden temporary suspension or progressive loss of the power of expression, or of the power of understanding words, heard or seen, is the next most frequent local sign of brain disease; and as the speech areas, motor and sensory, in the third frontal and first temporal convolutions are quite

definitely located, such disturbances may also guide the surgeon in his search. The loss of vision in one half of the visual fields, hemianopsia, is another important symptom showing disease in the occipital lobe. Thus definite signs are to be expected in brain tumours in about two-thirds of the accessible region of the cerebral cortex. (From Dr. Allen Starr's paper in the British Medical Journal, October 16, 1897.)

VERTIGO OF ARTERIO-SCLEROSIS, THE.

Cases of vertigo in elderly persons, associated with vascular degenerative changes are very far from uncommon, and its presence may, according to Gourçon (*Thèse de Paris*, 1897), furnish us with important therapeutic indications. He divides the cases into three classes:—(1) Simple vertigo; (2) vertigo with epileptiform attacks; and (3) vertigo with a permanently slow pulse. He admits, however, that these three types usually encroach upon one another. Simple vertigo may come on suddenly, or be preceded by discomfort and buzzing in the head, and may even cause syncope. The attacks may be very frequent, or may be separated from one another by an interval of several days. The duration of each individual attack is very short, but it may terminate in death. Vertigo with epileptiform attacks is less frequent, but should always suggest arterio-sclerosis when it comes on in middle life. Occasionally these attacks are also fatal. The vertigo with a slow pulse and attacks either syncopal or epileptiform, differ from the others only in the slowness of the pulse. Gourçon regards the symptoms as being due to implication in the arterio-sclerotic process of the lower vessels of the medulla, causing a less abundant and less regular supply of blood to the nerve centres in that situation. By way of treatment he recommends attention to the general health, strict regulation of the diet, and the administration of iodide of sodium and of nitro-glycerine, given together at first, but later on alternately—the iodide during twenty days of the month, and the nitro-glycerine on the remaining days. I would, however, advise great caution in the use of nitro-glycerine in these cases, at all events in commencing its use, as I have seen instances in which a dose as small as ℥ii. of a 1 per cent. solution has brought about a state of collapse sufficiently serious to give rise to grave anxiety. (Abstract in Treatment, September 29, 1897.)

WRY NECK, SPASMODIC.

Victor Horsley (*Clinical Journal*, June 30, 1897) discusses the pathology and treatment. The author classifies the clinical aspects of cases as follows:—(1) Torticollis nutans. The neck is flexed, the chin is bent forwards. Nodding movements are

produced by the longus colli and sterno-mastoid muscles. (2) Conjugate deviation of the head. The chin points straight to the shoulder, and the vertical axis of the head is parallel to the vertical axis of the body. "The sterno-mastoid of the side from which the head turns, and the splenius and other muscles on the other side, act in conjunction to produce this one deformity." (3) The head is turned to one side and the occiput tilted backwards, so as to prominently elevate the chin. "This form is simply produced by the muscles on one side of the neck contracting and dragging down the head to the corresponding shoulder, so that of necessity the chin is projected towards the opposite side. The muscles taking part in this are those supplied by the first and second cervical nerves on the one side—*e.g.*, the right, as shown by Dr. Risien Russell." (4) "Lateral flexion of the neck, with protrusion of the chin towards the opposite side from that flexed." "In this form the condition is much rarer. It can be evoked from the cortex cerebri in the bonnet monkey at a point nearer the marginal gyrus." (5) "The occiput is powerfully retracted on the spine, which at the same time is rather directed forwards. . . This appears to be produced by the spasm of all the muscles on the dorsal surface of the vertebral column, with the doubtful participation of the trapezius. From a survey of the just described varieties of torticollis, it is plain that the cortex cerebri is for the first three. The fourth and fifth varieties may be derived from the spinal centres, or even . . . from the cerebellum." *Treatment.*—After excluding hysterical cases, and cases due to cortical gumma or to cervical caries, the author recommends in suitable cases excision of part of the spinal accessory nerve. (From abstract in Practitioner, September, 1897.)

AFFECTIONS OF THE CIRCULATORY SYSTEM.

ANEURISM. AORTIC.

Gerhardt (*Deut. med. Woch.*, June 10, 1897) draws attention to two points in this disease emphasised of recent years:—(1) The comparatively frequent latency of aortic aneurism, the disease then giving rise to very few or indefinite symptoms. A paralysis of the left vocal cord may constitute the first means of recognising the aneurism. Auscultation of the upper part of the left interscapular space may reveal an arterio-diastolic murmur not heard elsewhere, or there may be here, or in the neighbourhood, a systolic murmur due to the beating of the aneurismal sac on the left bronchus. (2) The relation of syphilis to aneurism. Gerhardt refers to M. Schmidt's cases

where recovery followed antisyphilitic treatment. In twenty-five cases of aneurism in the author's clinic, there was past syphilis in nine out of the 17 men. Of other causes, traumatism was present in five, alcohol in two, overexertion in three, and anxiety and care in one. In eight cases there had been previous rheumatic manifestations. Opposite the third and fourth thoracic vertebræ, the large air passages, arteries, and the œsophagus cross. These structures are exposed here to various movements, including the movement downwards of the bronchi, owing to the descent of the diaphragm. Here a portion of the aortic aneurisms occur. Syphilitic disease of the air passages is chiefly situated here. Sometimes aortic aneurism and tracheo-bronchostenosis occur together. The author also refers to the frequency with which valvular disease, and especially aortic regurgitation, complicates locomotor ataxia, itself very often a para-syphilitic disease. A predisposing *rôle* must be allowed to syphilis in the causation of aneurism. It has yet to be shown when the treatment by iodides should be supplemented by mercurial inunction. (British Medical Journal Epitome, August 7, 1897.)

ANEURISM.—Treatment of.

M. Lancereaux presented a man, at the meeting of the Académie de Médecine, who had suffered for two years from aneurism of the transverse portion of the aorta, produced by the considerable efforts the patient was obliged to make in the nature of his work. The aneurism formed a tumour of the size of an infant's head, and had eroded a considerable portion of the upper part of the sternum and the corresponding ribs. The pulsations were synchronous with those of the heart, but there was complete absence of thrill and souffle. The tumour continuing to develop, and threatening perforation, a solution of 1 per cent. of gelatine, mixed with another solution of chloride of sodium, 1 in 1,000, was injected into the left gluteal region. The following day the tumour was found to be more firm, and the subsequent days it slightly diminished in volume. The injections were renewed at regular intervals, and in all twelve had been given up to date. At the time of speaking the tumour was diminished in volume; it seemed very solid, while the pulsations characteristic of the aneurism had ceased, and the patient suffered from no pain. (Medical Press and Circular, July 7, 1897.)

AORTIC INSUFFICIENCY WITHOUT MURMUR AND PSEUDO-INSUFFICIENCY.

V. Weismayr (*Zeitschrift für klinische Medicin*, vol. xxxii., supplement) says aortic insufficiency has a very characteristic symptom-complex; still, errors in diagnosis may arise, because

we may have:—(1) Accidental diastolic murmurs in the aortic area. (2) Incompetence without murmur. (3) Typical symptoms on the part of the peripheral vessels, without regurgitation—pseudo-insufficiency. The first of these conditions is very rare. Aortic regurgitation, mitral stenosis, pericarditis, and aneurism must be excluded. The occurrence of a lesion without a murmur is more common. It has been proposed, in explanation, that complicating lesions, aortic or mitral stenosis, may prevent a large amount of blood from entering the aorta, and by lessening the regurgitation, lessen or do away with the murmur. Lessening of the pressure in the arteries may bring about the same result. These facts do not explain the absence of a murmur in cases where there is high pressure in the vessels. Under such circumstances, the author thinks the shape of the opening may be important, as it may direct the return-flow in such a way that it meets the flow from the auricle at an angle so obtuse that the eddy, and with it the murmur, is diminished. A differential diagnosis between pseudo-aortic regurgitation and a regurgitation without a murmur is scarcely possible. The presence of the dicrotic crest does not exclude true regurgitation. If atheroma is present, and the valves are otherwise intact, the condition is most likely pseudo-insufficiency; if another lesion co-exists, a true regurgitation without a murmur is more probable. (From abstract in American Journal of the Medical Sciences, September, 1897.)

ARHYTHMIA, CARDIAC, IN CHILDREN.

The observations of O. Heubner (*Zeitschr. f. klin. Med.*, Bd. xliii.; *Jahrbuch f. Kinderheilk*, Bd. xliii.) are confined to the occurrence of arhythmic heart's action in children, exclusive of cases of organic heart disease and tubercular meningitis. (1) As a manifestation of the toxic action of drugs, this symptom occurred in one case of stramonium poisoning; not infrequently in cases of heart disease treated with digitalis; and in one case of afebrile appendicitis treated with large doses of opium. (2) In dyspeptic conditions, possibly due to auto-intoxication from the intestines. (3) In diseases of the abdominal organs, especially those accompanied by vomiting, in which, however, auto-intoxication was not evident. (4) In the course of infectious diseases, especially during the stage of convalescence. Under this heading are included the cases of arhythmic heart's action occurring after diphtheria, due to the action of toxin on the heart's muscle; less frequently cases of scarlet fever, with or without nephritis, but without organic lesion of the heart; and in some cases of scarlet fever in which the symptoms were by no means severe. The occurrence of this symptom after scarlet fever, measles, pneumonia, and typhoid, is much less

grave than when it occurs in diphtheria. (5) In anæmic and nervous children, arhythmic action of the heart is not uncommon, and has at times led to an incorrect diagnosis of tubercular meningitis. Heubner refers also to the cases of arhythmic heart's action occurring in pale, rapidly growing children at the time of puberty. (6) Arhythmic heart's action coincident with the presence of intestinal parasites. (7) Arhythmic heart's action following psychical disturbances; during sleep (Czerny); following exposure to cold after a warm bath (Löschner); and probably of reflex origin. (8) A so-called idiopathic arhythmic action described by Da Costa, which occurs in children from three to six years of age, oftentimes in several children of the same family. The symptom becomes more evident after deep breathing, and may be the only abnormality presented by the child. (From abstract in Boston Medical and Surgical Journal, July 29, 1897.)

DEATH, SUDDEN, IN HEART DISEASE.

It is the degenerations which supply the majority of the instances of sudden death. Angina pectoris is notably a malady which tends to terminate in the way under consideration; and in fatal cases some change in nutrition is practically always found—usually fatty degeneration of the muscular substance, and especially affection of the coronary arteries, interfering with the nutrition of the heart wall. Fatty infiltration, if excessive, may end in sudden syncope; this is much more likely to happen in the weak heart of true fatty metamorphosis. But of all conditions, the danger is most imminent when a degenerate heart has to face increased arterial tension. Here the type of cardiac action indicates the peril that threatens. The pulse is quickened; it may be irregular and intermittent, or fairly regular, and is often of good value, but its notable feature is high tension. The short and toneless first sound of the heart is hurriedly followed by a ringing aortic sound. This kind of action marks a ventricle that can barely hold its own until the strain is taken off by the closure of the aortic valves, and it is plain that the patient lives on the brink of a precipice, over which a trifling extra demand upon the heart may at any time determine his fall. (From Dr. Markham Skerritt's paper on "Prognosis in Heart Disease," The Lancet, November 6, 1897.)

HEART, THE FIRST SOUND OF.

Sir Richard Quain says that—(*a*) The action of the auriculo-ventricular valves is not the source of the first sound of the heart. (*b*) The muscular contraction of the walls of the heart during systole is not the source of the first sound of the heart. (*c*) The first sound of the heart is caused by the impact of the

blood, driven by the action of the muscular walls of the ventricles against the block produced by the columns of blood in the pulmonary artery and aorta which press upon the semilunar valves. (*d*) Lastly, sounds resembling the first (and second) sound of the heart can be produced artificially, in accordance with the view contained in the preceding communication. The first sound corresponds with the action of the ventricle in forcing the blood against the resistance offered by the valves and the columns of blood behind them; the second, short and sharp with the closure of the valves. The first sound, however, is heard best over the apex of the heart, but this may be explained by the conduction of the sound along the tense muscular walls of the ventricles. Nevertheless, it is frequently the case that the first sound is most distinct over the aortic valves. (From abstract in the Edinburgh Medical Journal, October, 1897.)

IODIDES IN HEART DISEASE.

The patients whom Vierordt (*Centralblatt für innere Medicin*, June 26) subjected to this plan of treatment were in part subjects of arterio-sclerosis that were free from cardiac distress, but for the most part those who suffered from such distress, especially angina pectoris. He excluded those in whom there was pronounced cardiac weakness, those who had albuminuria, and those who were over 60 years of age. Sodium iodide was ordered in doses of from four to eight grains, to be taken often enough for the patient to get fifteen, twenty-five, or thirty grains in the course of twenty-four hours. It was given in milk or seltzer water; subsequently potassium iodide was ordered in the form of Sandow's effervescent salt. The idea was that the patient should take the iodide for a long time, although with intermissions—the amounts mentioned for about nine months of the first year; and after that longer periods of its continued administration were directed from time to time. If there were intercurrent attacks of distressing cardiac symptoms, the iodide was given more freely, sometimes in conjunction with digitalis, nitroglycerine, or the like. The effects on the arterio-sclerosis were undoubted. They were the more pronounced in the cases accompanied by cardiac distress, especially angina pectoris. In order to make the test all the stricter, those patients only were subjected to the treatment who had previously been treated dietetically and in other ways in vain, and could be kept under observation for periods varying from two to four years after the use of the iodides was begun. On six such patients, five of whom were subject to seizures of angina pectoris that were sometimes of the severest type, the effects were quite striking; in some of the cases they were brilliant. The ability to work, which had been entirely lost, was regained,

and patients who before had suffered with cardiac pain and faintness, and been unable to walk on a level floor, could now walk upstairs. Vierordt thinks that in about half the cases of angina pectoris due to coronary sclerosis, long-continued benefit may be expected to follow the employment of this treatment, and it seems to be of little consequence, he adds, whether the arterio-sclerosis is of syphilitic origin or not. (From a leader in the New York Medical Journal, July 17, 1897.)

MYOCARDITIS, TREATMENT OF PARENCHYMATOUS.

No class of cardiac disease is of so great importance as the chronic mural conditions inducing cardiac failure. In the *Nord Médical* for May 6, 1897, Professor Lemoine publishes a lecture on the "Treatment of Parenchymatous Myocarditis," in which he gives valuable diagnostic criteria for distinguishing cases in which the morbid element is the muscular fibre, from the interstitial myocarditis, which is part of the general arterio-sclerotic process in cases evincing that vascular change. In the former the evidences of failure are largely limited to the heart; in the latter there is a more general affection of the organs and structures of the body. The key-note of the treatment of disease limited to the heart, is, necessarily to sustain the action of the organ, and to endeavour to bring about its regeneration. The drug which Professor Lemoine prefers for effecting this purpose is strophanthus, which, he believes, acts upon the heart through the nervous system, and in small doses, administered for months, or even years, exercises a continuous roborant influence upon the organ. As he states, strophanthus is, as a rule, well borne, because it has not the tendency to accumulate in the system like digitalis. While this is probably true in a great measure, it cannot be accepted absolutely, for the same retardation of cardiac action with gastro-intestinal irritation may be met with in cases treated by strophanthus as in those taking digitalis, although, it may be admitted, less frequently than in the case of the latter drug. For the removal of the precordial pain met with in parenchymatous myocarditis, Professor Lemoine advises counter irritation by cantharides, ammonia, or superficial cauterisation. When cardiac erethism is considerable, he uses two to four drops a day of tincture of veratrum viride, by which means violent cardiac pulsations may be reduced from 120 to 80 or 90 in the minute. Veratrum being a cardiac depressant, must necessarily be administered with great care, and the character of the rapid pulsation, with which it is intended to deal, must be taken into consideration rather than its merely tumultuous nature. Because veratrum unskilfully used may be injurious, it does not follow that it

should not be used, and the heart allowed to flap itself into exhaustion unchecked. Before, however, veratrum is had recourse to, that great and safe depressant of excessive cardiac action—ice—should be well tried. Ice to the head, or, if need be, to the chest, may in such cases be the most potent remedy. Professor Lemoine considers that a prophylactic treatment of myocarditis after infectious disease, by action upon the kidneys and soothing the nervous system by tepid baths and the avoidance of psychical disturbance, so far as possible, may serve to avert the ultimate consequences of parenchymatous myocarditis. (From Dr. A. Morrison's abstract in Treatment, 1897, p. 176.)

PARACENTESIS PERICARDII.—The Value of.

Where the condition of the patient is pressing, because of interference with vital functions, it is often absolutely necessary, for the purpose of saving life, to be bold enough to abstract, by means of a trocar and cannula, if necessary attached to an aspirating flask, fluid which may be pressing upon the lungs or upon the heart. That paracentesis pericardii is an operation surrounded by far greater difficulties than paracentesis thoracis or paracentesis abdominis is manifest, and those who have had much experience in clinical medicine, or in the performance of this operation, have often found it most difficult, first, to decide positively that the symptoms and physical signs are due to the pericardial effusion, and not to dilatation and hypertrophy of the heart. The history of pericarditis, however, the marked increase in the area of cardiac flatness downward to the right and left, the distant and feeble character of the heart sounds, and the evident manifestations of cardiac embarrassment, are at least objective signs which lead the physician to strongly believe that fluid has accumulated in the pericardial sac. After the difficulties of diagnosis have been put aside, the question next arises as to the spot at which paracentesis pericardii is to be performed, and it seems probable that the point of selection is the fifth interspace, close to the left border of the sternum, although others have suggested the fourth interspace, and still others that the cannula shall be inserted close to the right border of the sternum in the fifth interspace. The choice of the point for the introduction of the cannula depends very largely, however, upon the physical signs presented by the individual patient, although, in the great majority of instances, the fifth intercostal space, close to the sternum, is the area of preference. (From a leading article in the Therapeutic Gazette, September 15, 1897.)

RHYTHM OF THE HEART AND NEUROPATHIC DYSPEPSIA.

Dr. Sansom, of London, read this paper at the Montreal meeting of the British Medical Association. He said he had made a clinical study of a considerable number of cases in which there were disturbances of the rhythmic action of the heart, in order to determine if there was an association between it and dyspepsia. The conclusions arrived at from this study were the following:—(1) In the essential tachycardias without complications, the manifestations of dyspepsia are not marked. In forty-six cases there was not one of dyspepsia which persisted. (2) In the cases of tachycardia following influenza, dyspepsia was much more frequent, five out of thirty-seven cases. (3) Tachycardia accompanied by exophthalmic goitre was often associated with serious dyspepsia. (4) Arrhythmia of the heart without organic complications was often associated with dyspepsia. (5) Persistent brachycardia was evidently associated with marked dyspepsia, but intermittent brachycardia was also accompanied by epigastric pains, vomiting, and other signs of dyspepsia. (Medical Record, October 2, 1897.)

THEOBROMINE IN ASYSTOLE.

Baronaki (*Semaine médicale*; *The Lancet*, July 31, 1897) has found very great benefit from the administration of theobromine in cases of asystole in old persons, due to degeneration of the muscular walls of the organ. When, however, the asthenia depends upon lung or hepatic trouble, this drug is of much less value. In order to obtain its full effect, he puts the patient on a purely milk diet, with 30 minims of tincture of digitalis per diem for four days. He then substitutes for the digitalis theobromine, which is prescribed in 7½ grain powders every two hours during the daytime, so that six powders, or 45 grains of theobromine, are taken during the twenty-four hours. The diuretic effects of this are generally observed after a few doses, and the œdema and uræmic symptoms disappear. After this result has been obtained, it is not advisable to continue the use of the drug, as it is apt to produce nausea, giddiness, and mental excitement. It is best to order iodide of potassium, and then, if the symptoms of asystole reappear, to repeat the course of digitalis and theobromine. In very grave cases, where the effect of the drug rapidly passes off, and there appears to be danger in giving the digitalis too often, Dr. Baronaki has found the theobromine recover its diuretic power after venesection or scarification of the lower extremities. He has no doubt in his own mind that he has been able by this method to materially prolong the lives of several old persons who, from their

appearance and symptoms, would, if treated in other ways, have very rapidly succumbed to an attack of cardiac asthenia. (New York Medical Journal, August 28, 1897.)

TRACHEAL TUGGING.

Dr. Harry Toulmin, of Philadelphia, said that his attention had been called to tracheal tugging clinically under Dr. Osler, several years ago, and, on looking up the literature, he had found it discussed by two authors and mentioned by Dr. Packard. The word tugging meant, as stated by Dr. Ross, more than mere movement; or, if the latter condition were included, the cases might be divided into four groups:—(*a*) Very slight up-and-down movement; (*b*) slight movement; (*c*) distinct tugging; (*d*) marked tugging. Examination of seventy-five patients with various conditions, disclosed distinct tracheal tugging in only seven. The heart was normal in two of the seven, hypertrophied in four, insufficient in one, possibly aortic stenosis was present in another, in one there was aneurism of the ascending aorta. He said he should expect tugging in cases of dilatation of the aorta. If it were safe to draw conclusions from so limited a number of cases examined, he would say:—(1) Up-and-down movement of the trachea occurs in many healthy individuals, and accompanies other diseases as well as aneurism; (2) in such cases the movement is much affected by respiration, in the majority of cases being present during inspiration only; (3) in a very small percentage of cases distinct tugging of the trachea may be present without involvement of the aorta, either by aneurism or simple dilatation. (Medical Record, July 3, 1897.)

STROPHANTHUS.

Its special advantages over digitalis may be briefly stated as follows:—It does not produce gastric disturbances, and does not show cumulative action. The constriction of the vessels by digitalis may be a source of great danger, owing to the extra strain thrown on the ventricle, especially in fatty heart. Strophanthus has no such tendency. It acts quicker and with greater certainty. Owing to its ready solubility, it is better for hypodermatic administration, and the strength of its preparations can be more easily standardised. (From Dr. Mark Houghton's paper in the Journal of the American Medical Association, September 11, 1897.)

VALVULAR DISEASE.

(1) Dilatation of the left ventricle may occur in a heart having mitral obstruction. This seems contrary to theory, but the subject of cardiac dilatation cannot be wholly explained by a

consideration of pressure effects. The amount of dilatation may be often astonishing. (2) There is no kind of valvular disease of the heart which may not produce a thrill. Mitral disease causes lividity by interfering with the circulation of the blood, bronchitis by interfering with its aëration, and emphysema in both ways. (3) "Corrigan's pulse," capillary pulsation, visible pulsation and twisting of the arteries, though all typical features of aortic regurgitation, are none of them pathognomonic of the disease. Each may occur without the presence of any valvular lesion, and in old people they are often due to arterial degeneration. "Corrigan's pulse" is common in atheroma of the aortic arch. (4) Venous pulse in the superficial veins of the arms or hands, however, must be regarded as a more conclusive sign of aortic regurgitation, for it only occurs in the course of that disease, and perhaps in a few cases of extreme debility. (5) A rarer sign, but one which is quite pathognomonic of aortic regurgitation, is the conduction of the diastolic murmur into the large arteries, such as the femorals, over which vessels it is heard on auscultation, without using pressure with the stethoscope. (From Dr. Gee's Aphorisms in St. Bartholomew's Hospital Reports, xxxii., 1897.)

AFFECTIONS OF THE RESPIRATORY SYSTEM.

ABSCESS OF THE LUNG FOLLOWING PNEUMONIA.

Remarks by Mr. A. E. Griffin.—Cases of pneumonia followed by abscess of the lung seem to be sufficiently rare to merit reporting. Sturges and Coupland state:—"This is a most rare event in the after-history of acute pneumonia; it was found in but one case out of 144 examined after death." The same writers quote Traube as mentioning a case. Wilson Fox also mentions a case reported by Huss. In one case it may be pointed out that, though on the fourth day of illness the sputum was pneumonic, and on the sixth day typically so, it was not until the seventh day that tubular breath sounds were noted. Again, though on the twelfth day of illness twenty-four ounces of pus were removed, yet even before aspiration breath sounds were heard to the extreme base. The pus removed by aspiration had no odour, and at no time was the sputum or breath offensive. The change in the physical signs noted on the seventh day may have been due to the rupture and emptying of the abscess cavity into the pleura, but the physical signs at the base remained unaltered, and there were no signs of pneumothorax. That there was some accompanying effusion was recognised, but only after the delay in the crisis, with

sweating, coldness of the limbs, and increasing coma, was an empyema suspected. (From The Lancet, November 6, 1897.)

ABSCESS, PULMONARY.—Treatment of.

Dr. Carl Beck, of New York, read a paper, before the American Medical Association, Abscess of the lung was not a rare condition. Its attempted cure should be by purely surgical principles. The diagnosis is much easier than its localisation. The absence of tuberculous manifestations and exploratory puncture point to this condition. The principles of treatment consist of thorough evacuation of the pus and drainage. Particular care should be employed in rendering the skin aseptic, twenty-four hours being devoted to this purpose. The speaker then described the operation for entering the pleural cavity. If no adhesions exist the lung may collapse. Palpation of the lung area and the introduction of the needle into the lung may locate the pus focus. The Paquelin cautery thrust into the suspected portion is a useful aid in diagnosis; then one should introduce a director, and watch for the pus. After the cavity is exposed, no irrigation is necessary. Iodoform gauze should be packed into the cavity. The speaker advised blowing with the mouth frequently to increase the discharge. After the operation, small doses of morphine may be given. At the end of a week strophanthus and caffeine are advised. Anæsthesia should be given only when the patient is able to stand it. Even cocaine has its dangers. His experience was obtained from four cases, all of which terminated in recovery. In only one of these cases was the diagnosis of lung abscess made before operating. The history of this one case was given in detail. (Medical Record, July 17, 1897.)

AIR-PASSAGES, WOUNDS OF THE.

Of twenty-five cases of suicidal wounds of the throat that came under the care of Platt (*British Medical Journal*, May 8, 1897) ten involved injuries of the air-passages. The method of treatment to be employed he summarises as follows:—(1) Suicidal wounds of the throat should be treated by primary suture in all cases where the general condition of the patient permits. (2) Antiseptic precautions are most important. (3) If necessary, chloroform should be administered, and is perfectly safe. (4) Divided muscles should be sutured, and in bringing together the edges of skin, the inversion caused by the platysma muscle should be corrected. (5) The wound in the air-passage should be completely closed. (6) In many cases it is quite safe to dispense with the use of a tracheotomy tube. If a tube be deemed necessary, it should not be introduced through the suicidal wound in the air-passage, but through a

fresh vertical cut at a lower level. (7) Silk is the best material for suturing the larynx or trachea. (8) During the after-treatment it is unnecessary, except in certain special cases, to feed by a tube or by the rectum. (9) If the above methods of treatment be adopted, not only will a very large proportion of even dangerous and extensive wounds of the air-passages recover, but the period of recovery will be greatly shortened. The patient will not be exposed to the same risks of secondary inflammatory complications, and he will be much less liable to the occurrence of permanent stenosis of the trachea or the formation of aërial fistulæ. (American Journal of the Medical Sciences, October, 1897.)

BREATH SOUNDS.

The conclusions we necessarily arrive at are:—(1) That the various forms of breath sounds to be heard are due to the production of fluid veins and vibrating eddies of air, both in inspiration and expiration. (2) That the glottis is the main source of most of the varieties of breath sounds. (3) That vesicular breathing is not glottic in origin, but that the sound is produced peripherally, each infundibulum contributing its quota. (4) That in certain conditions, as in tuberculous cavities, pneumothorax, or bronchiectasis, there are local causes which are productive of murmurs, which may be superadded to or even replace the glottic sounds. (From Dr. W. Harrison's paper in the British Medical Journal, November 13, 1897.)

BRONCHITIS, ANTISTREPTOCOCCUS SERUM IN.

(By Dr. G. Carrière, *Presse Méd.*, Paris, June 5, 1897.) In a case thus treated with much benefit there were febrile temperature, profuse sweats, and abundant expectoration in the morning. There were the general signs of bronchitis with emphysema, together with some evidence of a cavity at the left apex. The sputum was repeatedly examined, and while it contained neither bacilli nor elastic fibres, streptococci were constantly found to be present. After an injection of 10 c.c. of antistreptococcic serum, the temperature first rose, but soon fell to normal, and improvement set in. A fortnight later the expectoration had greatly diminished in amount, not exceeding five or six ounces, and was more mucus and less purulent. There was general improvement, although the physical signs were unaltered. A second injection of the same amount was made. Three weeks after the second injection the patient left the hospital greatly improved. The cough was slight, and the expectoration only amounted to between one and two ounces. The cavity signs disappeared. In a month the patient was quite well. (From Dr. H. Mackenzie's abstract in the Practitioner, October, 1897.)

BRONCHO-PNEUMONIA IN CHILDREN.

To sum up, the treatment resolves itself into careful nourishment and support; in keeping the respiratory passages as clear as possible, from the nose to the ultimate bronchial tubes; in trying to maintain as good an action as possible of the lungs, and avoiding increased congestion and pulmonary obstruction by means of proper stimulation of the heart, and equalising the balance of the circulation between the veins and arteries; in attacking hyperpyrexia. Frequent doses of strychnine and nitroglycerine are the drugs found most useful. (From Dr. H. D. Chaplin's paper in the Medical Record, June 26, 1897.)

EMPYEMA, META-PNEUMONIC.

Many cases have been reported as cured by aspiration, and, though I have never relied upon aspiration when the fluid in the pleural cavity is purulent, I can well believe that aspiration resorted to early in the case may wholly cure. I have found this method most successful in simple effusion, and would resort to it in any suitable case of empyema. However, in my own experience, I have always made a simple incision between two ribs and introduced a fair-sized soft rubber tube. I prefer not to irrigate the cavity, even though the fluid be offensive. The tube should be short, and fixed securely in position. The nature of the case must determine the point at which the tube is to be inserted, and what length of time it is to remain. The empyema may be limited, and the pus cavity not large. The proper point for the incision is where the needle has demonstrated that pus is present, whether that point be high or low, at the back, side, or front of the chest. It is an abscess cavity, and should get the most direct drainage possible. (From Dr. MacKinnon's paper in the British Medical Journal, October 16, 1897.)

GROWTH, INTRA-THORACIC.

Dr. H. J. Campbell thus concludes his paper on six cases:—The only points to which I should like, in conclusion, to dwell upon, are—that one more frequently gets temporary remission of the symptoms and marked improvement in the general condition of the patient, in cases of mediastinal growth, than the text-books would lead one to expect. Numerous instances of such temporary improvement are scattered through the recent literature on the subject. Secondly, with regard to the age at which the disease is likely to occur, it has been frequently stated that the commonest age is between 20 and 30, but my own experience rather agrees with that of Fagge, who states that out of 33 cases that are recorded in the reports of Guy's

Hospital, more cases occur after 35 than before that age is reached. Pain has been a less prominent symptom in the above cases than it frequently is. The most noticeable general features have been the great dyspnœa, on the slightest exertion, out of all proportion to the extent of the physical signs, the marked interference with the return of blood to the heart, and, despite the severity of the symptoms and the extent of the disease, the non-implication of the recurrent laryngeal nerve in all except—doubtfully—the last case. With reference to the auscultatory phenomena, the chief points noted were the very deficient entry of air, and the soft, distant tubular breathing. (Quarterly Medical Journal, October, 1897.)

LARYNGECTOMY.

At a recent meeting of the Laryngological, Rhinological, and Otological Society (*Medical News*, 1897, No. 1281), Dr. Charles W. Richardson, of Washington, D.C., reported an unsuccessful case of laryngectomy in the male subject, for malignant disease of the larynx, acute œdema of the lungs having occurred suddenly on the evening of the second day after the operation. The growth was found to be far more extensive than had been supposed, as it filled the whole interior of the larynx, and extended into the trachea. Dr. James Kerr, of Washington, also reported a case of laryngectomy for malignant disease, in a female subject. The patient succumbed at the end of the first week from gradual failure of strength. The growth was a medullary carcinoma originating in some of the glands of the mucous membrane of the larynx. In both instances tracheotomy had been performed. In the first instance one week, and in the second instance one month before radical operation. Dr. M. R. Ward, of Pittsburg, reported a case of laryngectomy in a girl, 17 years of age, in whom a papilloma of the larynx had recurred as an epithelioma, the specimen having been found to be a mixed epithelial growth—an adeno-epithelioma. The patient died of exhaustion, a little over seven months after the operation, and almost three years after the disease had been first recognised. [The continuousness of neoplasia in this instance would lead to the inference that the diagnosis of papilloma, in the first instance, had been defective, even though based upon histologic examination of the excised growth.] (From Dr. Solis-Cohen's Periscope in the American Journal of Medical Science, November, 1897.)

LARYNX, EXAMINATION OF, IN CHILDREN.

Even in young infants the anatomical difficulties can be overcome by a simple method, demonstrated by Dr. Lack at a meeting of the Laryngological Society (*Proceedings*, vol. iv.,

1897, p. 52). No special instruments are required, and no force is employed. The method is described as follows:—The infant is supported in the usual position for laryngoscopy. The index finger of the left hand is passed well into the mouth, and the terminal phalanx hooked round the hyoid bone, which is pulled forwards. The rest of the finger acts as a tongue depressor, and the knuckle as a gag. The left thumb placed under the chin serves to steady the head. If a small laryngeal mirror be now introduced in the usual way, the larynx can be quite easily seen. The method causes no pain, no anæsthetic is required, and it is applicable in every case. The younger the infant, the less is the resistance and the easier the examination. Indeed, in older children, those with teeth, it is recommended to use a curved tongue depressor, such as a copper spatula suitably bent, instead of the finger; this latter may be preferred by laryngologists whose fingers occupy an inconvenient amount of the space afforded by an infant's mouth. (From Dr. St. Clair Thomson's summary in the Practitioner, August, 1897.)

LUNG.—The Surgery of the.

M. Tuffier (*La Semaine Médicale*, August 21, 1897) read a very full and important paper at Moscow upon the surgical treatment of tubercular cavities and of gangrene of the lung. He maintained that in every case of surgical interference with the lung there were three separate factors to be borne in mind:—(1) The opening of the thorax; (2) the treatment of the pleura; (3) the incision into the lung. The opening of the thorax is a comparatively simple matter—little or no trouble arises so long as the parietal and visceral layers of the pleura are adherent. But when there are no adhesions in the pleura at the place where the chest has been opened, it seems better either to look for them within the thorax or actually to make them. M. Tuffier makes his adhesions when it is necessary to do so by seizing the retracted lung, drawing it into the wound in the chest wall and fixing it there. This fixation, he thinks, presents many advantages, for it diminishes at once any threatening asphyxia, it lessens any anxiety which may be felt by the surgeon, and it relieves the arterial tension. As soon as the lung has been exposed, the surgeon must determine the point at which he is going to incise its tissue, and although hemorrhage is the most serious accident that can happen, M. Tuffier finds that its occurrence is not very frequent. When the cavity has been exposed, it must be explored both by touch and by sight, and the surgeon should always endeavour to ascertain whether the lesion is single or multiple before he plugs or drains it without first washing it out. M. Tuffier then proceeded to consider the surgical treatment to be employed in

the individual diseases to which the lung is liable, laying especial stress upon the treatment of pulmonary abscess, bronchiectasis, and gangrene of the lung. (Treatment, September 23, 1897.)

PHTHISIS.—Contagiousness of.

(By Dr. T. V. Bowditch, Boston Medical and Surgical Journal, June 25, 1897.) In conclusion, let me emphasise my own position in this matter, lest by any chance I should be misunderstood as wishing to relax in methods for perfect cleanliness about the consumptive patient. I advocate most firmly the destruction of the sputa by fire or other methods of disinfection. I believe also that the rooms occupied by a consumptive patient should be thoroughly cleansed with chlorinated lime or carbolic acid; in short, that all reasonable methods should be adopted to kill the germs of the disease; but I wish to refute the statement that properly regulated consumptive hospitals are sources of danger to the community, when I believe them to be exactly the opposite, as shown by statistics. I wish also to plead for the consumptive, who in his exile is made to feel the forlornness of his condition still more keenly by the selfishness of those who, in their desire to escape the possibility of infection, shut their doors in his face, as it were, utterly regardless of the mental suffering they are inflicting. (From abstract in the New York Medical Journal, July 11, 1897.)

Phthisis.—Creosote in.

To sum up the observations of M. Lemoine, in the *Norà Medical*, September 15, 1897:—Never give creosote to a patient with fever or signs of congestion (inflammation), nor with wasting, loss of appetite, nor long-continued hectic. It may be given when there is no fever, or only the slight fever of suppuration, as during the formation of cavities. Do not give it also when there is repeated hœmoptysis. In those cases where it is contra-indicated at first, it may later on be advantageously employed if, by suitable medication, we can remove those pathological conditions which at first rendered its use inadvisable.

Dr. Clifford Beale, in a paper on the employment of creosote in consumption, read before the Harveian Society, on October 21, 1897, gave a report of the employment of this drug in much larger doses than those hitherto used. As much as ʒij. to ʒiij. were given in the twenty-four hours. The creosote was well taken in cod-liver oil, and Dr. Beale stated that good results were noted when these large doses were reached. The greater part of the creosote appeared to be eliminated by the kidneys, and not by the lungs. (From Dr. Squire's abstract in Treatment, October 26, 1897.)

PLEURAL EFFUSIONS, Microscopical Examination in.

Dr. Warthin sums up his conclusions thus:—(1) In all doubtful cases, when fluid can be obtained by exploratory puncture, cover-glass preparations should be made by fixing in absolute alcohol and ether. This should be done immediately after the withdrawal of the fluid, in order that the mitoses may be preserved. (2) In early cases of simple pleurisy, the sediment contains endothelial cells and no fibroblasts. The endothelial cells may be desquamated in large pieces. (3) In fibrinous pleurisy, tuberculous or septic, the sediment contains, in addition to endothelial cells, numerous fibroblastic forms. In later stages, when adhesions are forming, the endothelial cells may be entirely absent, and only fibroblasts may be found. (4) In the diagnosis of sarcoma of serous cavities, the character and number of the cells and the presence of numerous mitoses are the points upon which the diagnosis must be based. It is, of course, evident that the quickly-growing soft forms of sarcomata are the ones most apt to lead to the presence of cells in the fluid. The tendency of all sarcomata to break down after reaching a certain growth, makes it extremely likely that in most cases free cells will be found. The diagnosis of spindle-celled sarcoma is easy, from the occurrence of large numbers of spindle cells of similar size and shape, showing fewer branching processes than fibroblasts, and containing more mitoses. In the round-cell forms, the tumour cells are to be distinguished from the endothelial cells by their size, the character of the nucleus, and the relation of the nucleus to the protoplasm. The presence of mitotic forms will again be the most important point; in the small round-celled sarcoma these are not so easily seen. The greatest difficulty will be in the differentiation of the cells of a polymorphous-celled sarcoma from the fibroblastic forms found in fibrinous exudates. And from the general character of cell and nucleus, the presence of division forms must in all cases be looked upon as being the most important point. In conclusion, therefore, the presence of numerous cell-division forms in the cells of the sediment of serous exudates may be taken as strong (perhaps conclusive) evidence that the effusion is due to the presence of a new growth, inasmuch as mitoses are but rarely found in the cells of purely inflammatory exudates. (From a leaderette in The Lancet, November 20, 1897.)

PLEURISY.

(1) It is safe to say that pleurisy is always due to an infection. Nevertheless, it would be absurd to deny the influence of injury, exposure, or local cold as determining factors in the onset of an attack. Either of these may produce a suitable soil

for the infecting microbe. (2) Tubercle is one of the commonest causes of a clear serous effusion. Cases may occur where, on drawing off the fluid, advanced phthisis is discovered, with the existence of cavities in the lung, the detection of which was quite impossible by auscultation previous to the tapping. Moreover, many cases of serous pleural effusion end fatally within ten years from tuberculosis. Again, tuberculous peritonitis is so often recovered from, that probably tuberculous pleuritis is also recovered from, cases never proved to be tuberculous having really been so. (3) Vomiting is an almost invariable symptom at the onset of pleurisy in children. Hæmoptysis, again, is not uncommon in both children and adults. (4) Temperature is no guide to the nature of a pleural effusion, whether serous or purulent. Neither is the duration of the effusion. But rigor and a discharge from the ear, if associated, probably point to an effusion being purulent. (5) A large heart may so press upon the root of the left lung as to produce collapse of its lower lobe. Such a condition can only be distinguished from pleural effusion by the needle. The symptoms which attend an effusion occurring in such circumstances, are more often than not left unrelieved by tapping. (6) Solid tumours of the chest and pleurisy with effusion give the same physical signs; but the former do not displace viscera (*e.g.*, the heart), whereas the latter do. (7) In the presence of a pleural effusion, the co-existence of a pericardial effusion cannot be made out by physical examination of the chest. Post-mortem, many unsuspected pericardial effusions are continually being discovered. (8) Blood-stained pleural effusion, though at one time supposed to be diagnostic of malignant disease of the lung, is not really so; for it occurs in some cases which rapidly recover, and, on the other hand, it is absent in some well-marked cases of cancer, the effusion being quite clear. (9) Serous pleural effusion so often clears up, that it is not good practice to drain one off as soon as discovered. (From Dr. Gee's Aphorisms, collected by Mr. T. J. Horder in the St. Bartholomew's Hospital Reports, xxxii., 1897.)

PNEUMONIA A MULTIPLE INFECTION.

Dr. J. W. Moore read a paper on this subject, before the Royal Academy of Medicine of Ireland, which he said might be considered from both an etiological (or bacteriological) and a clinical standpoint. The author adduced evidence that the micro-organisms peculiar to erysipelas, to influenza, to tuberculosis, and to enteric fever might one and all give rise to a specific pneumonia or pneumonic fever. So also might Loeffler's diphtheria bacillus and the bacillus of malignant anthrax, as well as other pathogenic bacteria. There was,

then, clinical evidence to show that a true pneumonitis might occur in any one of the four diseases with which this communication dealt, that is to say, erysipelas, influenza, tuberculosis, and enteric fever. Further, it was reasonable to suppose that in each case the pneumonitis was directly due to a localisation of the specific poison of the disease in the lung, whether that poison were a micro-organism itself, or a toxin derived therefrom. Indeed, in respect of three out of the four diseases named, the evidence from a bacteriological standpoint in favour of such a view was incontrovertible. As regarded enteric fever, the influence of season and weather in determining pneumonic trouble was no doubt considerable, but it could not be accepted as paramount or exclusive. And if it were objected that the bacilli typhi abdominalis of Eberth had not as yet been often found in the lungs or sputum of enteric fever patients, the author felt justified in attributing this to the comparative infrequency with which, so far, search had been made for these bacteria in the pulmonary organs. (British Medical Journal, December 11, 1897.)

PNEUMONIA, CROUPOUS, IN CHILDREN.

Dr. Church (*Clin. Journ.*, London, August 18, 1897, p. 257), draws attention to the diversity of symptoms, and the difficulties of diagnosis. Pain in the head and belly, accompanied by vomiting, are among the earliest symptoms met with. Of these, vomiting is one of the most constant. Pain in the belly is much more common than pain in the chest. There may be diarrhœa or constipation, and the malady may even simulate obstruction of the bowels. Cough is frequently absent altogether. Pyrexia is usually high. Delirium or drowsiness frequently go with the other symptoms, and meningitis may be suspected. Physical signs are often delayed, and may not make their appearance until the crisis is passed. A careful study of the respiration and pulse is considered by Dr. Church as one of the safest guides to diagnosis. In children the breathing is not only accelerated out of proportion to the pulse, but it is often characteristic of the disease, each expiration being accompanied by a grunting noise. Professor Henoch thinks that "many of the cases of recovery from meningitis, especially from tubercular meningitis, have been nothing but cases of pneumonia with cerebral symptoms which were wrongly diagnosed." In cases where the vomiting is excessive, Dr. Church advocates frequent small doses of calomel, until the bowels have been freely moved. In order to promote action of the skin, he uses the old-fashioned acetate of ammonia. (From Dr. H. Mackenzie's abstract in the Practitioner, October, 1897.)

PNEUMONIA.—Hot Baths in.

The hot bath, as employed at the Cincinnati Hospital, is given in pneumonia at a temperature of about 100 degrees. A tablespoonful of whiskey is given before immersion. The tub is moved alongside the bed of the patient, and immersion of the body is complete, the level of the water rising to the chin. The stay in the bath is prolonged to ten minutes, during which time the face is frequently sponged with cold water. On emerging from the bath the patient, without previous drying of the skin, is wrapped in a warm dry blanket, in which he remains for half an hour. The bed clothing is then changed, the skin rubbed vigorously until dry, and the patient left for the next three hours, when the process is repeated. The hot bath may be given at any age. The number of baths to be administered will vary with the character and duration of the case. I can only repeat that the fever furnishes no indication for the use or repetition of the bath. The average may be given as five or six per day during the febrile period, and one or two daily for several days thereafter. Recourse to the bath from the earliest period of the disease is to be strongly commended. Naturally the diagnosis must often be deferred for three or four days, owing to obscurity in physical signs, When, however, the nature of the disease is no longer doubtful, the bath treatment should be promptly instituted. Experience has shown that the patient is thus kept in better condition, and the course of the process influenced more decidedly than if the bath is given at a later stage. Of the 90 cases forming the basis of this report, 71 recovered and 19 died. Four of these were moribund on admission, and of the others there was the usual contingent of chronic nephritis, pericarditis, and tubercular diseases; six died quite suddenly, two on the fourth and two on the seventh day, while the remaining two succumbed when all danger seemed past, one expiring during a meal, the other just after he had answered that he was much better. I believe that wider experience with the hot bath will but add to the conviction of its general utility in the management of one of the most fatal of acute diseases. (From Dr. Joseph Eichberg's paper in the Journal of the American Medical Association, July 17, 1897.)

AFFECTIONS OF THE DIGESTIVE SYSTEM.

APPENDICITIS AND HYSTERIA.

Talamon (*Medécine moderne*, 1897, No. 24; *Centralblatt für Chirurgie*, July 10, 1897), in an addendum to a lecture of Rendu's, calls attention to his observations published six years

ago, and gives the histories of three cases since observed by him. Simple appendicular colic or parietal inflammation of the appendix, he says, may be accompanied in hysterical persons, especially women, by nervous symptoms, constituting a perfect picture of severe diffuse peritonitis. In such cases an operation, although demonstrated to have been unnecessary, has a decided psychical effect usually, but not always. The lesson is that in persons with appendicular symptoms, the general condition must be carefully inquired into, especially with reference to hysteria. (New York Medical Journal, July 31, 1897.)

APPENDICITIS IN THE FEMALE.

Richelot (*La Gynécologie*, June, 1897) emphasises the difficulty of diagnosing appendicitis in the female. He reports six cases in which it was impossible to decide positively before opening the abdomen. In the absence of a clear history and early observation of the case, it is still more difficult to make an exact diagnosis. The presence of pain and a tumour in the region of the right tube and ovary, situated high up (the left being normal), should always awaken the suspicion of possible appendical trouble. On the other hand, an inflamed appendix may be adherent in the *cul-de-sac*. In the absence of any swelling, the pains complained of by certain neurotic females may simulate those of appendical origin. If the hymen be intact, it is fair to infer that an inflammatory enlargement on the right side is due to appendicitis rather than to disease of the adnexa. (American Journal of Medical Science, November, 1897.)

ASCITES.—Diagnosis of.

Dr. James Tyson alludes to a tympanic note found in the flanks, in a case of ascites and general anasarca, in a woman, aged 37. When lying on her back, the lower abdomen was somewhat bulging, and over this region and laterally on both sides as far as a vertical line drawn through the anterior superior spinous process of the ilium, distinct fluctuation and a succussion wave could be elicited. Behind this, distinct tympany could be brought out by percussion in both flanks. It was usually more marked on the right side. So marked was the tympany, and so much in contrast with what seemed usual, that experienced men who saw her thought that the condition could not be ordinary ascites, but must be a collection of fluid, circumscribed by adhesions. A trocar was introduced, and seven pints of clear serum drawn off, such as constitutes an ordinary ascites, emptying the abdomen completely of fluid. As the fluid reaccumulated, the original signs appeared, and were followed by another tapping, when an equal amount of fluid was drawn off. This was repeated several times. Having

had this experience with the patient referred to, I proceeded to examine carefully every case of ascites I met in the wards, and in quite a number I could bring out, by percussion, an area of tympany located as described. It varied in extent and distinctness, and in no case was it as marked as in the woman referred to. It was, however, easily recognisable, though not always in each flank, sometimes being more marked in one and sometimes in another, while it was sometimes present in one and absent in another. (From Dr. Tyson's paper in the Journal of the American Association, August 7, 1897.)

CHOLANGITIS, SUPPURATIVE.

In suppurative cholangitis there is usually progressive enlargement of the whole liver, which may descend as low as the umbilicus, the swelling being uniform, smooth, and tender to pressure. If the cause be in the common duct, and the gall-bladder has not previously become contracted, there will be the additional enlargement caused by its distension ; but when contraction of the gall-bladder has taken place, and also when the obstruction is in the hepatic duct, there will be an absence of the signs of cholecystitis. Pain may be entirely absent, but where the disease is caused by gall-stones, the pain may be severe and paroxysmal, each attack being accompanied by ague-like seizures and an intensification of the jaundice. Jaundice is always present, and is usually both persistent and intense, though where the obstruction is a floating gall-stone, acting like a ball valve in the common duct, the jaundice may vary from time to time, and may almost disappear. Fever with occasional rigors and profuse perspiration form a feature of the disease, and with this there is rapid loss of flesh and strength. The disease is always serious, and often proves fatal; though, if the cause can be removed at an early stage, recovery may occur. If the course be sub-acute, the inflammation may concentrate itself in some part of the liver leading to abscess, which may form a distinct tender swelling, and give rise to the usual symptoms and signs of hepatic abscess. If ordinary infective cholangitis pass on to general suppurative cholangitis, recovery probably seldom occurs. Hepatitis and multiple liver abscesses frequently follow on cholangitis, and are usually followed by general and fatal infection of the system. *Treatment.*—Unless free evacuation of the infected contents of the bile passages can be accomplished, either naturally or artificially, treatment is practically useless. (From Mr. Mayo Robson's paper in the Quarterly Medical Journal, October, 1897.)

CONSTIPATION, HABITUAL.

The causes of habitual constipation are :—Heredity ; the habit of suppressing the desire; unsuitable diet—too abundant,

deficient in water, too easily absorbed, or insufficient in variety; sedentary habits (although obstinate habitual constipation may occur even in those who lead an active life); disturbances in the circulation (heart disease, mechanical pressure, pregnancy); displacement of the bowel; intestinal adhesions. The treatment is given as follows:—(1) dietetic, (2) physico-mechanical, (3) medicinal. In the first method, such foods should be given as are known to increase peristalsis. The "physico-mechanical" includes suitable massage (often of great value), electricity, and enemata. The disadvantage of enemata is that ultimately small quantities of fluid do not suffice, and large quantities over-distend the intestine, and become useless. Regular attempts at defecation, with slight pressure, are recommended. Medicinal treatment is discussed under two groups, mild and more powerful purgatives. An efficient rhubarb preparation is very useful. Calomel is very useful in children. Castor oil is unsuitable for constant use. Large injections of olive oil are of value.—*Berlin. Klinik.* (Medical Record, October 9, 1897.)

DYSENTERY, TREATMENT OF SEVERE.

MM. F. J. Bosc and V. Vedel recommend the use of intravenous injections of salt water, reporting four instances of their use. They conclude:—(1) Large injections (40 to 60 ounces) of sodium chloride, seven *per mille*, constitute an energetic treatment. (2) They should be made early and repeated, so that they will develop sustained general reaction and a modification of the general condition which can lead to recovery. Three of the four patients treated survived, although all appeared to be hopeless; the fourth, although *in extremis*, lived longer, and was brought into better condition through this treatment. (3) There are no contraindications to this treatment, but care should be taken as to the quantity used and the rapidity with which it is injected. Too large injections are dangerous, and from one and one-half to three ounces each minute should not be exceeded.—*La Presse Médicale*, 1897, No. 51, p. 288. (American Journal of Medical Science, November, 1897.)

ENTEROCOLITIS.—Treatment of.

At a meeting of the Société de Thérapeutique (Paris), on June 9, M. Mathieu (*Le Progrés Médical*, June 12, 1897) remarked that enterocolitis contraindicated the use of drastic purgatives. He believes that small doses of senna, along with hydrastis or hamamelis, give good results (as stated by G. Seé) if there are bloody stools. Besides hygienic measures (massage, Swedish gymnastics) and regulation of diet, M. Mathieu advises laxatives and enemata. One day a large enema may be given, and the next day three teaspoonsful of castor oil. Cascara, along with

calcined magnesia, may be useful. He prefers large enemata and saline purgatives to antiseptics, to assure intestinal disinfection. The large injections must be given gently, the quantity may be 1 litre, 1½ litres, to 2 litres at the most. He advises solutions of borax or sodium chloride, but condemns water containing boracic acid or naphthol, which are irritants. When there are dysenteric stools, he approves the use of nitrate of silver in 1 to 3 or 4,000, as advised by M. Charrin. High injections give good results, but simple lavage of the rectum is preferable. Hot, or better still cold, applications to the abdomen are useful adjuncts. For pain, belladonna (which does not constipate), codeia, extract of cannabis indica should be used rather than opium or morphia. Cold or hot baths, valerianate of ammonium, change of air may modify the neuropathic condition usual in these patients. The diet must be free from irritating or easily fermentable foods, such as spices, preserves, shell-fish, &c. In certain rather rare cases, with much diarrhœa and gastric troubles, milk diet, along with saline purgatives, is indicated. (Medical Chronicle, 1897, p. 383.)

GALL-BLADDER.—Diagnosis of.

The diagnosis between a distended gall-bladder and a displaced right kidney is often a matter of some difficulty. The points usually given are:—(1) The history of biliary colic. (2) The movement of the tumour with respiration. (3) That the lower extremity is movable, whereas the upper is fixed. (4) That the kidney may be felt behind the distended gall-bladder. (5) That the colon lies in front of the kidney and behind the gall-bladder. (6) In pyonephrosis the urine may contain pus, and in distended gall-bladder bile pigment may be present. (From Dr. Graham's paper in the British Medical Journal, October 30, 1897.)

GASTRIC ULCER AND GASTRALGIA.

(1) In ulceration of the stomach, when the patient is young, it is generally a succession of ulcers you have to deal with; when the patient is old, it is generally one ulcer, which does not heal. (2) A gastric ulcer which has been diagnosed seldom perforates. When perforation takes place, this is generally the first symptom. Under treatment the risk of perforation is very small. (3) Gastric and duodenal ulcers are not to be distinguished clinically. Duodenal ulcers only occur in the "gastric" part of the duodenum, *i.e.*, above the opening of the bile and pancreatic ducts, where the contents of the gut are still acid. The vomit in these cases is sometimes excessively sour, so that the patient's teeth are set on edge by it. (4) In gastric ulcer the pain is commensurate with the acidity of the

stomach contents. It is owing to this fact that relief follows the act of vomiting. It is owing to the same fact that the pain usually comes on an hour or so after food is taken. (5) The pain of chronic gastric ulcer is very often relieved by firm pressure upon the epigastrium. (6) The "Carlsbad treatment" in cases of chronic gastric ulcer is sometimes useful, though it has become of less importance since the introduction of the stomach-tube. It consists in the free use of alkalies and aperients. Carbonate of magnesium is a particularly useful drug, for it is a powerful antiacid, and the soluble salts of magnesium are good aperients, ensuring thorough emptying of the stomach. (7) Washing out the stomach is of great service in cases of chronic gastric ulcer, where there is no hæmatemesis. No fermentable foods should be given in these cases; but milk is an exception to this rule, for though it is fermentable, experience shows it to be devoid of ill effects. (8) Simple gastric ulcer is not a common cause of sub-diaphragmatic abscess and pleurisy. The ulcers of the stomach causing pleurisy are nearly always cancerous, and the fœtor of the pus in these cases is usually very marked. (9) Sub-diaphragmatic abscess occurring as a metastatic abscess (*i.e.*, the result of pyæmia) must be very rare. Hence pyæmia (with a sub-diaphragmatic abscess) is usually to be regarded as secondary to the abscess itself. (10) Pain in the stomach is often a neuralgia, and is very common in well-to-do patients. The pain may bear no relation to food, and be quite unrelieved by vomiting. In treating such cases, dieting is generally of no use: patients can digest toasted cheese. Liquor arsenicalis is by far the most valuable drug. (11) Neuralgia and debility ("atonic dyspepsia"), which is part of a general weakness, are the only two common affections of the stomach in a young man who is sober. (From Dr. Gee's Aphorisms, collected by Mr. T. J. Horder, in the St. Bartholomew's Hospital Reports, xxxii., 1897.)

Gastric Ulcer.—Surgical Treatment of.

Leube (*Centralbl. für Chirurgie*, No. 28, 1897), at the last Congress of the Deutscher Gesellschaft für Chirurgie, extolled the advantages of the medicinal and dietetic treatment of ulcer of the stomach. In a large proportion of cases treated by the author's method—which consists in rest, low diet, and hot external applications—complete and permanent cure has, it is stated, been effected in the course of three or four weeks. In some few cases, however (about 4 per cent.), it will be found advisable to apply for the aid of the surgeon, in order to make up for the failure of internal treatment, and to avert a fatal result. Surgical intervention, it is held, is positively indicated in cases of small but frequently repeated hemorrhages from the

stomach. A single attack of profuse bleeding is not regarded as an indication for operation. Profuse hæmatemesis, unless caused by the erosion of a coronary artery, seldom causes death. Operative treatment, especially the performance of gastro-enterostomy, is indicated in cases of gastric ulcer, in which intense pain and frequent vomiting lead to the diagnosis of spasmodic stenosis of the pylorus. When these symptoms do not yield to rest and medical treatment, and the patient is threatened with death from inanition, the surgeon should be called in at once. Surgical intervention, the author states, is not generally required in cases of perigastritis and consequent adhesion of the stomach to adjacent parts, but only when the inflammatory adhesions have formed a swelling which can be distinctly felt through the abdominal wall. In such an instance where probably carcinoma would be suspected, exploratory laparotomy should be practised, and, if possible, the tumour removed. Laparotomy is certainly indicated in cases in which the ulcer has opened into the peritoneal cavity. The operation, it is urged, should be performed early, as the prospects of success are very slight if it be delayed until an interval has expired of ten hours from the actual time of the perforation. At the same sitting of the Congress, an elaborate review of the surgical treatment of gastric ulcer was given by Mikulicz, who, whilst agreeing in many points with Leube, advocated more frequent surgical intervention, on the grounds that the disease, having a tendency to relapse, is more likely to be effectually cured by radical operation than by expectant and medicinal treatment. In cases of open non-complicated ulcer of the stomach, surgical intervention, he holds, is indicated by the presence of symptoms which, directly or indirectly, threaten the life of the patient (frequent bleeding, increasing emaciation), commencing suppurative perigastritis), and when suitable and prolonged medicinal treatment has, after repeated trial, given but temporary relief, and the working capacity and comfort of the patient are much disturbed by gastralgia, vomiting, and dyspepsia. Mikulicz, in cases of open gastric ulcer indicating operative interference, is opposed to excision of the affected portion of the stomach; and of the two remaining operations—pyloroplasty and gastro-enterostomy—prefers the former. Prompt surgical intervention, he states, is indicated in cases of perforating ulcer. The success of such intervention would be much favoured, he holds, by an empty state of the stomach at the time of perforation, and by an early operation. The prospects of a good result are four times better when the operation is performed within the first twelve hours, than when laparotomy has been delayed beyond this period. (British Medical Journal Epitome, August 14, 1897.)

HÆMATEMESIS.

In hæmatemesis we can adopt measures more actively and with greater hope, because our drugs can reach the bleeding spot. In the young an ulceration into an artery is the almost universal causation of such trouble, and here the swallowing of ice or ice-cold water in small quantities, or per contra (and better, I believe) hot water at 110° F., is very likely to be of use, while bismuth, chalk, or strong solutions of tannin will very rapidly cause the formation of a plugging clot. Ergot in such cases I think worse than useless. In the hæmatemeses of older people there are two probable or possible sources for free bleeding:—(1) an ulcer chronic or malignant, in which the treatment just suggested is the best; and (2) a ruptured vein or capillary oozing from a cirrhotic liver. Here, in addition to the foregoing, ergot may perhaps be useful, though I would prefer to try free purgation. (From Dr. F. J. Smith's paper in The Lancet, November 20, 1897.)

HÆMORRHOIDS, SUBSTITUTE FOR WHITEHEAD'S OPERATION FOR.

Earle (*Vir. Med. Semi-monthly*, October 8, 1897) has secured good results from an operative procedure, which he holds in higher esteem than the popular Whitehead operation. Like the latter, Earle's operation is intended for those patients who present an entire ring of internal and external hæmorrhoids. The internal hæmorrhoids are first grasped individually between two clamps, the pile being divided between them, and the cut surface closed by a continuous suture of catgut. The suture may be quickly applied by passing the needle over and under the clamp, leaving the turns of thread loose, so that this instrument may be withdrawn. When this has been done, the suture is drawn tight. The internal hæmorrhoids having all been treated in this manner, a skin incision is made to the right and left of the anus, directly over the dilated subcutaneous veins, and roughly parallel to the anal margin. Care must be taken not to have this incision pass the anterior or posterior commissure. The skin is reflected back, and the veins are dissected free, ligated, and removed. The superfluous skin is cut away, and its edges united by a continuous catgut suture. By this means the writer claims to obtain all the advantages and none of the disadvantages of the more formidable Whitehead operation. (Medical News, October 20, 1897.)

INFANTILE CHOLERA.

M. Lesage strongly recommends injections of artificial serum, frequently repeated in those cases of infantile diarrhœa where algidity is imminent. I have followed (he says) this method

for some years, and have frequently obtained marvellous and unhoped-for results. At the present day they seem to me to out-distance every other treatment. As soon as a child is seized with watery diarrhœa, with tendency to algidity, I immediately give an injection of serum, and suppress at the same time all food. The solutions I employ are one of the following:—Chloride of sodium, 7 grammes; sterilised water, 1 litre; sulphate of soda, 10 grammes; chloride of sodium, 5 grammes; water (sterilised), 1 litre. The injections are made in the subcutaneous tissue of the abdomen, and the place massaged, in order to help the absorption of the liquid; from three to six injections of an ounce each are to be given daily. Under the influence of these injections, the circulation regains its activity, and the general condition of the patient is almost immediately improved. (Medical Press and Circular, August 11, 1897.)

LIVER, PARACENTESIS IN CIRRHOSIS OF.

Paracentesis is only a palliative measure, but by removing the pressure from the kidneys and renal veins, it may be the starting-point of a cure. You should tap early, and, if necessary, often, because if you allow the abdomen to become much distended, its walls become relaxed, the bowels become distended, and you get most uncomfortable meteorism, especially after a paracentesis. One case under my care was tapped 100 times in twelve months, and over 35,000 ounces of fluid removed. During this time this hopeless case had also three severe attacks of hæmatemesis, from the last of which he succumbed. The best evidence of successful treatment is the disappearance of fluid from the peritoneal cavity. If I had allowed our patient's abdomen to have become enormously distended and the wall relaxed, it would have been much more difficult to have effected the improvement, or I might say cure, which has taken place. (From Dr. James Barr's paper in the Liverpool Medico-Chirurgical Journal, July, 1897.)

OPERATIONS, LOCAL ANÆSTHESIA IN ABDOMINAL.

Dr. I. E. Van Iterson, of Leyden, does all his intestinal operations without general anæsthesia. Of these, there were sixteen gastrostomies, twenty gastro-enterostomies, two resections of the pylorus (one patient still living and well, sixteen months after the operation), one jejunostomy, and ten colostomies. His plan is to inject two syringefuls of 1 per cent. solution of cocaine into the abdominal wall; this makes the external incision painless. Manipulation of the intestine causes no complaint on the part of the patient, unless the mesentery

is pulled on. The stitches can be inserted into the abdominal walls after the operation, without causing much pain, thanks to the persistent effect of the cocaine injections. The advantages of the method are that the exhausting effect of the long anæsthesia on patients who are already weakened by inanition, is avoided. Besides, the giving of food may be begun at once. While the patients are still on the table, Dr. Iterson begins to give small quantities of milk, and this is continued every half-hour afterward. Another feature of this paper was the statement that the author usually has his patients sit up during the convalescence after the operation, and has their position frequently changed. He thus avoids the hypostatic pneumonias that so often carry off weakened patients after serious operations. Neither the operating without general anæsthesia nor the changes of position afterward are ungrateful to the patients, who seem very well satisfied with the methods employed. (Medical Record, September 18, 1897.)

OPIUM, EFFECTS OF, ON THE BOWEL.

Rámossy, of Buda Pest, has recently been engaged with experiments on animals, to test which alkaloid or active principle in opium inhibited the peristaltic action of the bowel. The result of his researches may briefly be stated by saying that 0·02 to 0·4 gramme of morphia injected into the veins of a guinea-pig, has no local effect on the stimulus of the bowel itself, while the vagus is undoubtedly the part affected. Narcotin acts feebly on the reflex movements of the bowel, but has no inhibitory power over the peristaltic action. Thebaine increases the stimulus, and produces strong peristaltic movements. Narceine acts like narcotine. Codeine, kryptopine, and laudanum increase the stimuli of the bowel. Papaverine resembles morphia in its action. He concludes by saying that his results are still negative with regard to the action of opium on the peristaltic action of the bowel. (Medical Press and Circular, 1897, p. 213.)

PANCREATIC LITHIASIS.

An abstract of the following case, published by J. Nicolas, appears in a recent number of the *Revue des Sciences Médicales.* A man, aged 47 years, entered a hospital in consequence of an affection which began suddenly two and a half months previously, and was characterised by loss of strength, anorexia, and violent epigastric pains of an intermittent and paroxysmal type. Very abundant melæna, amounting to a litre, took place, which relieved him. This occurred again. There was no diarrhœa. The signs of pancreatic diabetes showed themselves. He passed 179 grammes of sugar per day. Six months after

the onset of the disease he died from caseous pneumonia. At the necropsy, the duct of Wirsung was found to be obstructed by fifteen or twenty calculi embedded in the walls. The duct communicated with a large purulent cavity, which occupied a third of the pancreas, which was sclerosed. The cavity opened into the duodenum by a fistula. Probably from its walls the blood of the melæna had issued.

PERITONITIS, TREATMENT OF GENERAL SUPPURATIVE.

Recovery after laparotomy for suppurative peritonitis is rare. A new method of operating, described by Dr. J. M. T. Finney, in a recent number of the Johns Hopkins Hospital *Bulletin*, which proved successful in five consecutive cases, therefore demands attention. He attributes the failure of previous methods to insufficient removal of the infectious exudation. The observations of Pawlowsky show that in purulent peritonitis the lymph channels are choked with bacteria and inflammatory products. The naturally great powers of absorption of the peritoneum are much diminished, and it is unable to dispose of the inflammatory products. Dr. Finney operates as follows. A sufficiently long incision to admit of easy access to all parts of the peritoneal cavity is made. The coils of small intestine are quickly withdrawn, beginning with the one that is perforated. All, or as much as is necessary, of the small intestine is placed outside the abdomen, and covered with warm gauze or towels. The peritoneal cavity is then thoroughly and systematically wiped out with large pledgets of gauze wrung out of hot salt solution, paying particular attention to the pelvis. In some cases it may be well to flush with warm salt solution, but this is rarely necessary. Next the small intestine is systematically examined loop by loop while still outside the abdomen, and cleansed by wiping. It is necessary to wipe with considerable force at times, in order to remove adherent flakes of partly organised lymph. Success depends on the thoroughness with which this is done. The cleansing process is facilitated if the wiping of the coils is carried on under a constant irrigation of warm salt solution. The intestines are replaced with the damaged or sutured coil the most superficial, in order that it may be better drained by being packed around with gauze if necessary. The abdominal wound is tightly closed, leaving just room enough between two sutures for a gauze drain. If there are any evidences of distension or pain, Paquelin's cautery should be thoroughly applied to the abdomen, and the bowels should be moved early by calomel in repeated doses, followed by salts and a turpentine enema. To ensure success, the operation should, if possible, be performed within a few hours

of perforation. In Dr. Finney's five successful cases, the peritonitis was secondary to typhoid perforation in one, and to appendicitis in four. He operated unsuccessfully in one case of appendicitis, but the patient was *in extremis* at the time of the operation, which was only undertaken as a forlorn hope. (The Lancet, October 16, 1897.)

RECTUM, CARCINOMA OF.—Treatment after Colotomy.

In conclusion, I would add a word as to the best means of covering and protecting the artificial anus when the patient is convalescent. An apparatus fitted with a plug has been adopted in many cases, but it is exceedingly liable to set up irritation and even ulceration. I prefer a hollow oval cup, made either of plated metal, vulcanite, or celluloid, with a rolled edge, and kept in position either by a truss-spring or an abdominal belt. This hollow cup should be large enough to include a two-inch margin of skin all round the opening, and in its concavity a small quantity of some antiseptic dressing is placed, so as to protect and cover the exposed mucous membrane. This will enable the patient to go about in comparative comfort; the bowels should be encouraged to act thoroughly every morning, so that no further disturbance need occur during the day, and patients have told me that they have been even able to prevent the escape of flatus. (From Mr. W. Rose's paper in the Practitioner, July, 1897.)

TAKA-DIASTASE IN VARIOUS GASTRIC DISORDERS.

Dr. Julius Friedenwald has made a very careful clinical study, making use of modern chemical tests, and concludes that:—(1) This remedy exerts no influence, under normal conditions, upon gastric digestion, nor upon cases of nervous dyspepsia with normal motor and secretory functions. (2) In cases of motor disturbances of the stomach, with normal secretory functions, such as atony, it increases the motor action without in any way influencing the secretory function or the digestion of starches. (3) In cases of subacidity it acts differently, according to whether there is a catarrh or a nervous dyspepsia. In nervous cases it has no effect whatever upon digestion, while in cases of catarrh it appears to have a tendency to increase the flow of acid and promote the digestion of starches. (4) It exerts its most favourable influence in cases of superacidity, not only promoting the digestion of starches, but diminishing the excess of acid, and increasing the motor functions. (5) It in a great measure replaces the saliva when this secretion is diminished or absent. It then not only digests the starches in the stomach, but serves

the other functions of the saliva in stimulating the gastric secretion, and therefore promoting the proteid digestion.—*New York Medical Journal*, 1897, No. 965, p. 731. (American Journal of Medical Science, September, 1897.)

TAPEWORM.—Diagnosis and Treatment of.

The diagnosis is often made by the patient before she presents herself; and, again, cases exist which have been treated for dyspepsia, anæmia, and many other disorders for a long time. The symptoms are not well defined, though intestinal disorders, with or without pain, salivation, vertigo, loss of flesh with great increase of appetite, are the most common ones. The imagination in woman may vary the symptoms in many ways after once the presence of the worm is known. The following treatment for the adult, I have found to give much satisfaction. It contains nothing new except in the combination:—A brisk cathartic is taken. Strict orders as to diet are then given. For one and a half days she is allowed only two cups of tea with toast. At the end of her fast, she receives a half-ounce of magnesium sulphate, with two glasses of water; early the next day half an ounce of castor oil; about two hours later, after numerous stools, she takes the first dose of the following mixture, followed by another an hour later, until all has been taken:—℞. Spir. chloroformi, ʒij.; ol. terebinthinæ; oleoresinæ aspidii, ana ʒi.; glycerini, q.s. ad ʒi. M. S. ʒij. q. h. In order to find the head and smaller portions, a good deal of care must be exercised in the manner in which the stools are received and examined. A good routine practice is to have ready several pieces of cheesecloth, one of which is to be stretched over a receptacle. As soon as one evacuation has taken place, put another cloth in its place, spreading these cloths with contents on sheets of newspapers for examination. It is only thus, with great care, that all parts may be washed and saved, and the head may then often be discovered. (Medical Record, August 28, 1897.)

VOMITING, INTRACTABLE.—Treatment of

The treatment which I should suggest in a case of intractable or pernicious vomiting, might be formulated as follows:—(1) Maintaining a semi-recumbent or sitting posture. The head and shoulders being kept as high as possible. (2) Introducing, preferably by a tube, small quantities of concentrated pre-digested or easily digestible food, at short intervals. (3) The hypodermic use of morphine in doses of $\frac{1}{40}$ grain, repeated hourly. This last-named procedure has proven most successful in my hands, and will of itself arrest any ordinary case of vomiting. I regret my inability to give its author proper

credit. If these measures fail, I suggest intubation with this modified tubé, or, that failing, tracheotomy. To prevent possible misunderstanding, I would state that so heroic a method as tracheotomy is not here recommended in any cases of vomiting, save only those which, by their pernicious and intractable character, actually threaten the patient's life. Here, as elsewhere, it is the *dernier ressort*. (From Dr. C. L. Green's paper in the British Medical Journal, October 16, 1897.)

AFFECTIONS OF URINARY AND GENERATIVE SYSTEMS.

CHANCRES.—Treatment of.

Fournier (*La Presse Med.*, July 7, 1897) has an excellent paper upon the treatment of chancres, from which the following practical points are taken:—(1) Forbid sexual intercourse. (2) Forbid a stimulating diet. (3) Counsel moderation in exercise. (4) Prescribe frequent warm baths, local and general, and a simple ointment for local application. Irritating substances such as alum, ferric chloride, carbolic acid, &c., should never be used. Iodoform, though an excellent application, had better be dispensed with on account of its odour. Nitrate of silver is much abused, and should never be used except to stimulate healing in chancres which remain stubbornly covered with a crust; or upon indolent ulcers or exuberant granulations. In these cases the application ought not to be repeated oftener than every five days. If the chancre is at the meatus, the same rules of treatment apply, but they are to be carried out with the greatest pains, on account of the tendency to inflammation of a chancre in this situation. If the chancre is situated within the urethra, aside from the local and general baths and the administration of diluents, nothing is to be done, as in such cases the introduction of foreign substances, either fluid or solid, within the urethra, only aggravates the trouble. (Medical News, October 9, 1897.)

GONORRHŒA.—Argonin in.

Basing his assertions on the effects obtained in thirty-three cases of more or less chronic gonorrhœa, none recent, Zydlovitsch recommends argonin as superior to all other medication for this purpose. It causes the rapid disappearance of the gonococci; does not aggravate the pathologic process, but attenuates it. It should be continued until no gonococci are discovered in the course of three to five examinations at three day intervals. The argonin is injected into the anterior portion

of the urethra in a 3 to 200 solution five times a day, and retained five minutes. The posterior portion is treated with a 2·5 to 100 solution instilled. The consecutive catarrh with astringents.—*Gaz. Méd. de Liège*, August 5. (Journal of the American Medical Association, September 18, 1897.)

INCONTINENCE OF URINE IN CHILDREN.

A useful paper on this subject, by Dr. J. A. Coutts, is published in *Treatment* of September 9, 1897. He states that the vast majority of cases of nocturnal incontinence can be relieved by waking the child at stated intervals to micturate. Restriction of liquids during the latter hours of the day will help. But in a few cases this seemed to keep up the disorder, the vesical mucous membrane being evidently intolerant of the highly concentrated urine so produced. In obstinate cases, if the urine is of high specific gravity and acidity, then the child should be encouraged to drink freely towards the end of the day. A signal success may be thus achieved. Of drugs, belladonna still is foremost, but it often fails. This sometimes arises from the common method of giving several doses during the day. A much more efficient one is to give one single large dose in the evening, which can be gradually increased every four or five days, and, when the incontinence ceases, gradually diminished. If belladonna fails, recourse must be had to other drugs. Of these he places most reliance on lycopodium, the merits of which have been as yet but little recognised. He gives twenty drops of the tincture three times a day to a small child, and increases the dose gradually to a drachm. Possibly more could be given. He knows of no poisonous properties attaching to the drug, but admits he may be at fault in that respect. In ordinary cases, bromide of potassium has proved of less service to him than to some others. But there are cases in which it may prove of the utmost benefit—those in which micturition occurs when waking is imminent or takes place. He has seen but little benefit from strychnine, but in combination with iron in cases accompanied with anæmia and lassitude, it has been of great service. When drugs fail, there remain other methods. In many instances micturition does not occur while the child lies on his side, but immediately when he turns on his back. Here a bobbin strapped over the lower spine is effectual. Circumcision is to be recommended only where there is undue tightness of the prepuce. (The Lancet, October 30, 1897.)

KIDNEY, GRANULAR.

Rational scientific treatment being in essence the counterpoise to that artificial life engendered by organic change of tissue, to a certain extent treatment must be modified according to the tissue or organ principally affected. But, admitting that such

organ or tissue may require special consideration, the underlying basis of treatment must be kept in view, and will resolve itself into the antithesis of faulty excretion or secretion. Our primary object being to control, so much as lies in our power, the production of effete material having toxic influence upon the economy, I believe the main principle to success lies in the careful supervision of food-stuffs. The patient suffering from this form of renal disease must live upon fish, fruit, and fowl. He should have all butcher's meat excluded from his table. Strong soups, meat essences, gravies, and extracts must be put aside. His diet should be light, easily digested, and limited in quantity—in fact, a bare existence dietary. Milk in any form, farinaceous food, fresh fruit and vegetables, will of itself contribute largely to giving comfort and relief, without recourse to drugs of any sort or kind. Fluids may be taken freely, but alcohol in but small amount. The fashion of the day is whiskey; often light sound wines are better, but if spirit be taken, let it be measured as if a drug. Each case has to be managed on its own merits; individual peculiarities must be considered, due attention being paid to age and sex. As a general rule, the earlier in life the symptoms show themselves, the more formidable will the disease prove itself to be. Patients are prone to spasmodic paroxysms of increased tension, which are probably due to vasomotor influence induced by toxic interference. Such temporary indisposition may be successfully dealt with by small doses of bromide, combined with bicarbonate of potash and carbonate of ammonia in large doses, and given in effervescence with citric acid or lemon juice. This remedy materially relieves that distressing headache so commonly met with in these cases. (From Dr. Donald Hood's paper in Treatment, August 26, 1897.)

LITHOLAPAXY.

Of five cases of very large stones treated by Bigelow's operation, one only was fatal. I think I am justified in saying that no other method has ever given such favourable results. It must be admitted, however, that the operation in such cases is not easy, and I would recommend its practice only to those who have already some experience of litholapaxy. The principal difficulties are:—(1) From the great force necessary to crush large and hard stones. This great force may, however, be safely and certainly applied if specially strong instruments are used. (2) From the contraction of the walls of the bladder on the stone, preventing the introduction of the lithotrite and the seizure of the calculus. This contraction is best corrected by the application of hydrostatic pressure, produced by a column of water, and continued during three, four, or five minutes. (3) From the length of time necessary for the complete extraction

of the *débris*. In some of my operations this has extended to two and one-half hours or even more, and during this long period it was necessary to keep up the strength not only of the patient, but of the operator also. The operation invented by Bigelow, and named by him litholapaxy, is gaining in favour day by day; the limits of its application are removed one by one. Neither extreme youth nor extreme old age need any longer be taken into consideration; the diseased condition of the bladder and of other organs are no longer a contraindication; and I trust that in the immediate future the limitations due to the size and hardness of the stone will entirely disappear. (From Mr. Herbert Milton's paper in the Medical Record, September 18, 1897.)

NEPHRITIS.

(1) You will rarely be wrong if you consider all cases of nephritis not associated with some obvious morbid poison, such as scarlet fever, diphtheria, pneumonia, &c., to be chronic. (2) Quite apart from either diphtheria or scarlet fever, patients suffering from attacks of sore throat are liable to nephritis, which is of temporary duration, lasting as long as the quinsy. The urine is usually bloody in such cases. (3) It is impossible to distinguish with certainty between the varieties of nephritis during life; much albumen and little urine may be found in a case of chronic interstitial nephritis. (4) Nothing cuts off the flow of urine so much as persistent vomiting. This result may be so marked, that unless the cause be remembered, you may suspect "suppression of urine" as the condition producing the diminution in the quantity of urine passed. (5) Having excluded calculus, hæmaturia in people who are past middle life is most commonly due to granular kidneys. (6) Hæmaturia repeated after long intervals may be the only evidence of the existence of granular kidneys. (7) "Granular kidney" may exist to an extreme degree without any albuminuria. Moreover, in some cases, no signs of cardiac hypertrophy may be made out. These cases usually terminate either by the development of ordinary Bright's disease with dropsy, or by the occurrence of cerebral hemorrhage. (8) Black hellebore and cantharides are the two most efficient drugs for arresting hæmaturia due to granular kidney, &c. The latter drug, however, is a dangerous remedy, sometimes producing foci of suppuration in the kidney, if injudiciously used. (From Dr. Gee's Aphorisms, collected by Mr. T. J. Horder, in the St. Bartholomew's Hospital Reports, xxxii., 1897.)

RENAL DISEASE.—Surgical Operation in.

The importance of adequate kidneys is emphasised by Dr. Tuttle (Mass.) The importance of the estimation of the amount of

urea in the urine is pointed out by him, as well as the significance of urine of a constantly low specific gravity. A reduction of 50 per cent. in the amount of urea excreted should contra-indicate severe operation, which would itself throw much increased work upon the kidneys. The following points are borrowed from a lecture by Professor Obalinski. We only nowadays sacrifice a kidney by nephrectomy when it contains within itself a focus which may be injurious to the organism, *i.e.*, when a malignant growth or primary tuberculosis are positively diagnosed. When an enlarged, hard kidney can be felt before operation, it is probably functionless or nearly so, and the other kidney is capable of performing the functions of both. Catheterisation of the ureters is of little practical value in determining nephrectomy, since a diseased kidney may still be capable of doing the work of two. Where, in the kidney to be operated on, we suspect that there is still a certain functional capacity, we should never sacrifice it, but perform nephrotomy. The adequacy of the remaining kidney after nephrectomy cannot be always foreseen. Indeed, a kidney which is to all macroscopic and microscopic appearances healthy, may be for some obscure reason functionless, and fatal aneuria occur. In 1 in 300 persons one kidney alone exists. Practically exploratory incision is the only means of recognising renal abnormalities ; cystoscopy and ureteral catheterisation are unreliable. (The Hospital, October 16, 1897.)

ROENTGEN RAYS.

Mr. Harry Fenwick describes the use of the Roentgen rays fluoroscope for detection of a stone in the exposed kidney. He says that the disadvantages of the method are as follows:—(1) The kidney must be brought on to the loin, and it is not every kidney that can be dislocated. In some the vessels are too short, in others the kidney is fixed high up under the ribs, and the operator may at once feel that free separation ought not to be risked. Women, of course, are easy subjects for renal dislocation—in fact, renal surgery in women bears no comparison, as regards difficulty, with that of men. (2) The operating room must be absolutely dark, and the initial steps of exposing the organ of course need a fair light. (3) The rays ought to be from a 10-inch coil, and concentrated upon the kidney, the tube being placed near the organ. (4) The screen used must be a good one, for there are many screens on the market which do not deserve the name of a fluoroscope. It should be made so that it can be rendered aseptic, and must be brought near the kidney. (British Medical Journal, October 16, 1897.)

STRICTURE, TREATMENT OF URETHRAL.

Mr. Warden draws the following conclusions:—The less force we use the more certain are our results in the dilatation of stricture. Let your general rule be to pass two soft bougies, differing by one-third of a millimetre, or two to four metallic bougies, differing by one-sixth of a millimetre, at a time; to leave them in but a minute or two, or even to withdraw them at once; to pass them not oftener than upon alternate days, and always to commence with a lower number. Thus, and thus only, will you successfully treat a dilatable stricture, that is to say, the great majority of strictures. If you have in hand a "bad" stricture, try "prolonged dilatation," but only with soft bougies that enter easily—with, indeed, a bougie that seems to your reason "too small." It is not, however, to reason that we must appeal for guidance, but to the formal dictation of clinical experience, and clinical experience shows us that it is the dynamical, not the mechanical, use of dilating instruments that will give us lastingly good results, without inconvenience, and without danger to our patients. How the simple contact of instruments thus affects the whole tissue of the stricture, is made more clear by the study of the pathology of inflammation, and the knowledge of the effect of irritation in the transformation of living tissue. It would be absurd, of course, to suppose that we dispense entirely with the mechanical action; the mere fact that we make use of instruments proves it. But no mechanical force is used, because we know such would be useless and dangerous, and would determine pathological changes rather than what we might call the physiological action desired. If all the resources of this method be fairly tried without achieving sufficient dilatation, you have but one resource—internal urethrotomy in one form or another. (Edinburgh Medical Journal, September, 1897.)

URINE, STERILISATION OF.

Mr. Reginald Harrison (*The Lancet*, June 26, 1897) says that the sterilisation of the urine by internal medicines is an important adjunct to the treatment. Specific gravity, the reaction, and the composition of this secretion may to a large extent be artificially influenced, and in these directions the course of suppurative diseases of the urine passages may be importantly and favourably acted upon. He had already referred to the sterilising influence that certain oils and essences, such as sandalwood and copaiba, are capable of exercising in this way. No less marked is the effect that boracic acid taken internally is capable of effecting in controlling bacterial life in the urine. Probably no better proof of this exists than in the results observed in connection with operations on the urethra,

such as the passing of catheters, and in internal urethrotomy. Similarly the use of quinine as a prophylactic against urine fever, has been shown to be most efficacious; salol and other like drugs are also well recognised as urine sterilisers. Though boracic acid, in doses of ten to fifteen grains, three or four times in the day, is probably one of the most reliable sterilisers, it so often disagrees and causes dyspepsia as to interfere greatly with its use for the purpose. Some years ago the author's attention was called to a preparation called boro-citrate of magnesia, which was described by Dr. Koehler, of Kosten, in Germany, as a solvent for uric acid calculi, and gravel. Whilst testing it for this purpose, he found that it frequently had a remarkable effect in sterilising and clearing up purulent urine, and in favouring the expulsion of calculi and gravel by its flushing effects on the urine passages. For the latter purpose he has used it for the last ten years, in conjunction with other means, for preventing urine decomposition, with considerable effect. He is now in the habit of prescribing it in teaspoonful doses, in half a tumbler or so of either warm or cold water, two or three times a day. We have other means for sterilising the urine by the mouth. No one method or drug is universally applicable. There is a combination of the salicylate of soda with the benzoate of soda which possesses this power in a marked degree. He has frequently found urine which has been rendered opaque by the presence of pus, and swarming with bacteria, rendered clear in the course of a few days after the use of this preparation. He usually prescribes fifteen grains of both of these salts to be taken together, three times a day, in an ounce of chloroform water. The hyposulphite of soda, in half-drachm doses, has also, in some instances, effected the same object. (The Therapeutic Gazette, September 15, 1897.)

GENERAL SURGERY AND AFFECTIONS OF THE BONES, JOINTS, &c.

ANÆSTHESIA, NITROUS OXIDE.

The first principle of administration is the total exclusion of air by means of a carefully adjusted padded face-piece and suitable valves. So long as the apparatus employed is known to be working properly, no anxiety need be felt if, at the outset, the patient appears to hold his breath, for this is generally due to sheer nervousness; or if, at a later period, the lividity becomes very pronounced, there need be no alarm. The first impulse of the tyro under either of these conditions is to lift the face-piece, with the result that the patient comes

partly round. If the friends are in the room they should, of course, be placed somewhere where they cannot actually see the patient. The next lesson to be learnt is, that the phenomena of nitrous oxide anæsthesia apparently differ *toto cœlo* from those observed with other anæsthetics. Occasionally there are some slight rhythmic movements of the limbs, and these are usually the only indications of the second, or stage of excitement. If anything more decided occurs we may suspect air leakage of some sort, either under the face-piece, through the beard, or through a badly fitting tube or valve. The third stage, or stage of anæsthesia, is usually associated with more or less muscular spasm, subsultus tendinum, and irregular, jerky, laryngeal stertor. As a rule, these two latter (subsultus, and irregular, jerky, laryngeal stertor) are taken as indications for removal of the face-piece. These signs are in strong contrast with the muscular relaxation and insensibility of the corneal conjunctivæ, observed with other anæsthetics. That a certain amount of risk is attached to the inhalation of nitrous oxide is, of course, true; but, judging from the records, the danger to life is really remarkably small, not more perhaps, even if as much, as that attendant upon parturition. (From Dr. Silk's article in Treatment, September 23, 1897.)

ANEURISM OF EXTERNAL ILIAC ARTERY.

The introduction of the transperitoneal method of ligature of the iliac arteries was due to Dr. Dennis, of New York. Among its advantages are the less danger to the peritoneum and other structures that it entails, the greater ease with which the operation can be performed, and the choice which it gives to the surgeon of the best position for the ligature. In many cases also the older incision is rendered exceedingly difficult by the presence of the aneurism for which the ligature of the artery is required. There is, in the transperitoneal incision, certainly the added risk of sepsis in the peritoneal cavity, but with even ordinary care this risk is slight. A man, aged 45, was admitted into the Leeds Infirmary suffering from an aneurism situated at the junction of the external iliac and the femoral arteries. The aneurism was about the size of a hen's egg. Under ether, Mr. Brown opened the abdomen in the line of the external iliac artery, cutting through the peritoneum. He tied the vessel midway between the bifurcation of the common iliac and Poupart's ligament, a silk ligature being used. Pulsation was immediately stopped. The peritoneum was then stitched together, and the abdominal wound closed in the ordinary way. The patient made an uninterrupted recovery, and is now walking about. *Remarks by Mr. Brown.*—This is the second time that I have had occasion to tie the external iliac artery for aneurism, and in each case I have operated by the transperitoneal

operation, and with a good result. I think the method has many advantages over the older operation, and, provided strict cleanliness is maintained, is not more likely to be attended with disaster. In both cases the ordinary operation would have been difficult, if not impossible, owing to the position of the swelling. (The Lancet, October 23, 1897.)

BURNS, PICRIC ACID IN.

(By Mr. Alexander Miles.) The ideal dressing for a burn was one which should relieve pain, prevent sepsis, allay the spread of inflammation, promote separation of sloughs with a minimum loss of tissue, and, lastly, favour the formation of granulations. Picric acid was used as a saturated solution having this fomula:—℞. Ac. picric., ʒiss.; alcohol abs., ʒiij.; aquam ad ʒxl. After purification of the burn, pieces of sterilised lint soaked in the solution were applied. It was important to remember that the dressing must not be used as a poultice. The lint might remain on the burn for from three to five days, and when dressing was needed it was unnecessary to remove all the lint; any part which was found dry and firmly adherent to the subjacent tissues could be left, simply being saturated with the picric acid solution. The advantages of the method were its simplicity, its painlessness, its antisepsis and consequent lessening of discharge and odour, the infrequency with which dressing was required, the astringent action of the picric acid, rapid separation of sloughs, and growth of epithelium. It was, in addition, extremely economical, and no case of poisoning from absorption had been recorded. The sole disadvantage was the staining of the skin. It was of especial use in superficial burns, but would be found efficacious even in those of the fifth and sixth degree. (Medical Press and Circular, July 24, 1897.)

DRESSING OF DECALCIFIED BONE.

Considerations led me to try the effect of decalcified bones in the treatment of granulating wounds. For this purpose I used the most cancellous portions of the bones of an ox, thoroughly depriving them of their fat, decalcifying and preserving them in a 1 in 20 solution of carbolic acid. Properly prepared, the bone should be as soft as sponge, porous, and pliable. I have used the dressing in many cases, and feel fully justified in recommending it. The impressions left upon my mind by the use of "decalcified bone dressing" may be summed up as follows:—(*a*) It may be used for any kind of granulating wound, and has been very successful in obstinate fistulæ and callous ulcers; (*b*) in no case has it caused the slightest irritation; on the contrary, any existing irritation has subsided on the use of the dressing, and the temperature has fallen—this applies even

to fistulæ which have been left five days without re-dressing; (*c*) it brings about a healthy state of the granulations, and the discharges from the wound diminish; and (*d*) the dressing is gradually absorbed, melting down at the base and sides. (From the paper of Dr. F. W. Robinson, Huddersfield, in The Lancet, October 2, 1897.)

FRACTURES, OPEN TREATMENT OF.

Altogether, the cases in which the open treatment should be resorted to would be few and far between. Nor does the experience of the writer, or what he has gleaned from literature, warrant him in coming to conclusions that are final. Nevertheless, he believes that it would be justifiable to submit in a tentative way, the following postulates:—(1) The conversion of a simple fracture is justifiable when other means to secure the best end results fail. (2) In fractures of the diaphysis of the tibia, femur, humerus, and clavicle in which insurmountable longitudinal displacement of axial rotation has taken place, immediate operation or mediate operation before definite union has occurred is indicated. (3) In epiphyseal separations, when reduction cannot be otherwise effected, an early operation is justified. (4) Fractures complicated with dislocations, irreducible by other methods, warrant operative interference. (5) The involvement of a joint, except probably in the case of knee and hip, do not, *per se*, militate against operation if this is otherwise indicated. (6) If extensive comminution is present, as in compression or crushed fracture, operation is contraindicated. (7) Special precautions against infection must be taken, in connection with which should be borne in mind the dangers of too firmly closing a wound, and the advantage of temporary tamponade and secondary suture. (8) Reckless and indiscriminate resort to the operative relief of deformity in recent simple fractures is to be condemned, since there would be few fields of surgery, in the event of an unsuccessful intervention, in which the contrast could be greater between the good intended and the harm done. (From Dr. Ransohoff's paper in the American Journal of Medical Science, October, 1897.)

GANGRENE, CARBOLIC ACID.

Lévai has been able to find records of only forty-two cases of carbolic-acid gangrene in literature, but the *Centralblatt für Chirurgie*, August 14, 1897, in which an abstract of his article appears, mentions also a case reported by Morestin (*Bulletin de la Société anatomique de Paris*) and three cases observed in the course of six months by Czerny (*Münchener medicinische Wochenschrift*). Morestin's patient was a child, two years old,

to whose middle finger the mother had kept a solution, apparently very weak, applied for twenty-four hours. Mummification took place, also exarticulation of the finger at the junction of the first and second phalanges. Czerny makes his cases the text for a renewed warning to the profession and the public, against the use of even the weakest solutions for continuous application. Lévai's article closes with an account of his experimental confirmation of this clinical experience, showing that it is really the acid that is the cause of the trouble. Carbolic acid is the germicide with which the public are best acquainted, it is the one that first presents itself to the lay mind in case of a wound, and it is a drug that almost anybody can obtain without trouble. It is highly important, therefore, that the danger here pointed out anew should be made known to the community extensively. (From a leader in the New York Medical Journal, September 11, 1897.)

ROENTGEN RAYS AND GRAVE DERMATITIS.

Dr. Apostoli's conclusions are summarised as follows:—(1) The application of X rays may give rise, under certain circumstances, to a more or less grave dermatitis, characterised either by a simple erythema or by a more or less deep eschar, which may involve the skin as far as the subcutaneous cellular tissue. (2) This dermatitis, which varies according to the region attacked, varies also, to a certain degree, according to the constitutional condition of the subject; it is comparable, in many respects, to an ordinary electric burn, and presents, like the latter, the same general characteristics of asepsis, apyrexia, a very slow progress towards repair, and an intensity which is about uniform in its entire extent. (3) This dermatitis is always the result of a faulty method of operation, caused either, and above all, by the too near approach of the tube, by the prolonged duration of a single application, or by too many applications following each other at too short an interval. (New York Medical Journal, July 24, 1897.)

SHOCK AND HEMORRHAGE.

Dr. Walter B. Chase draws the following conclusions:—(1) The treatment of shock should be preventive and curative, and to a large degree the indications for the former define the lines of treatment in the latter. (2) The proper exhibition of preventive measures includes a careful study of the functional activity and organic status of all important organs, and such treatment by hygienic, dietetic, and therapeutic measures as will elevate the standard of bodily and mental health to a degree in which the maximum power of resistance may be produced and maintained. (3) Special emphasis should be given to lithæmic and uræmic excretion, and to the condition of the circulatory and nervous

systems. (4) Knowledge as to inherited power of resistance to and recovery from serious disease and accidents, is of the highest value in determining the course of procedure, and in estimating the chances for recovery after capital operations. (5) A supply of facilities and drugs for meeting all emergencies should be in constant readiness, with exact knowledge for the indications, dosage, physiological and therapeutic effect of special heart tonics and stimulants, including strychnine, digitalis, nitroglycerine, &c. (6) Limit the time of an operation to the shortest space compatible with thorough work and proper technique. (7) Save the patient to the utmost from the shock of fear, and in selected cases proceed to operation without informing the patient of your purpose. (8) In shock with hemorrhage supply the volume of venous and arterial loss by direct transfusion of decinormal salt solution into the patient's veins. (9) Bear in mind the influence position has on the circulation under both shock and hemorrhage, especially in anæmic conditions of the cerebro-spinal nerve centres and the heart. (Medical Record, October 2, 1897.)

SERUMTHERAPY IN SURGICAL TUBERCULOSIS.

Skuetecki (*Gazz. degli Osped.*, October 10, 1897) reports seven cases of surgical tuberculosis in which good results followed the use of injections (1 c.cm. on alternate days) of Maragliano serum. The first case was a boy of 7, with tuberculous disease of the iliac bone and vertebræ, of two years' duration. Thirty-six injections were given altogether, bringing the temperature down to normal, increasing the appetite and weight (by 4 kgr.), diminishing the night sweats and number of bacilli in the discharges. At the end of this time severe enteritis set in, owing to dietetic errors, and the boy died of slow septicæmia. The second case was that of a boy of 5, with tuberculous disease of the left knee and extensive sinuses. After scraping, the boy was given 42 injections of serum, and went out cured. In the five other cases, the results were as satisfactory as in the second case. In no case did any bad effects follow the injections. No cutaneous tuberculosis or engorgement of neighbouring glands was observed. The temperature fell in every case, the weight, appetite, and strength improved, and the tubercle bacilli decreased in number. The author believes the serum has a marked and indisputable antitoxic action. (British Medical Journal Epitome, November 20, 1897.)

SPRAINS AND THEIR TREATMENT.

Graham defines a sprain as a wrench or twist of a joint; a sudden, partial displacement of two articulating surfaces, followed by immediate replacement. The symptoms include

pain, swelling, discoloration, and usually heat, with impaired mobility. The diagnosis may be obscured by swelling, which may conceal also a fracture of bone. Whatever will quickly reduce the heat, the pain, and the swelling—such as massage, snug bandaging, and an elevated position of the joint—will proportionately make the diagnosis easier. The means just mentioned are therefore valuable not only for diagnosis, but also for treatment; and their use in many cases of sprains of all degrees of severity shows that recovery follows in one-third of the time required under absolute rest and fixed dressings without massage. Even the condition of a sprain involving a joint previously weakened by malignant disease may be rapidly ameliorated by massage, and useful motion be gained before amputation.—*Boston Medical and Surgical Journal*, June 17 and 24, 1897. (Medical Record, November 6, 1897.)

WOUNDS, SUTURING OF.

Dr. H. O. Marcey spoke first of the desirability of closing the wound permanently at the end of an operation. To do this one has to use a suture which will perfectly coapt the surfaces of the wound, and at the same time is susceptible of absorption. The use of animal ligatures in wounds had for many years been employed with success, before it occurred to the reader to employ such material as tendons, thus abandoning the dangerous use, in all aseptic wounds, of drainage-tubes. Catgut, however prepared, soon becomes weak and soft when buried in the tissues. Tendons have not this disadvantage, and the tendons of the cariboo and moose, and, later, the tendons of the tail of the kangaroo, have been successively tested and advocated. Of all methods of suture, the uninterrupted suture gives the best results, and each plane should be sutured by itself. An over-and-over glover's stitch is not as satisfactory as an in-and-out suture, each stitch being made to enter the tissues exactly opposite to where the last comes out, so that the thread crosses the wound at right angles. (Medical News, September 4, 1897.)

AFFECTIONS OF THE SKIN, &c.

ECZEMA AND PICRIC ACID.

M. Gaucher spoke on the treatment of eczema by picric acid, which gave, in his hands, very good results. He commenced by painting the surface over with a 1 per cent. solution, and then applied a compress, steeped in the liquid, which he left *in situ* two days. At the end of that time, the inflammation had

considerably subsided, the redness and oozing of the skin had diminished, and the epidermis began to desquamate. By renewing the dressing every two days, the parts healed rapidly; the solution of picric acid had also the advantage of easing the itching. This mode of treatment was only applicable to moist and inflamed eczema in the acute state; it had no action on the chronic form. He adopted this method on the interesting cases reported by Dr. McLennan, of Glasgow, who seemed to have been the first to have treated acute eczema with picric acid. (Medical Press and Circular, June 2, 1897.)

ECZEMA, TREATMENT OF OBSTINATE.

(By Dr. C. S. Abbott.) Eczema is really an inflammation of the skin, and is characterised by the same phenomena as inflammations elsewhere. There is no specific for eczema. The remedies which will give the best results are the saline cathartics, mineral waters, alkaline diuretics, calomel, &c. When there is some existing systemic disorder, the remedies of the greatest efficacy are iron, cod-liver oil, salicylates, colchicum, &c. Some cases will recover with local treatment alone. The most useful ointments are the zinc ointment, unguent diachylon, and those containing some form of mercury. Of all the remedies used for chronic eczema, some form of tar is usually the best. This should not be used over a moist patch, but it is the remedy *par excellence* over a dry, scaling surface. The causes of eczema are as varied as its appearance, and are probably both constitutional and local. One of the most difficult forms to relieve is a chronic erythematous eczema of the face, because of its abundant nerve- and blood-supply, and of our inability to protect it from irritation. For remedies the more soothing applications, such as the zinc and lime-water wash, are indicated. Eczema is one of the most troublesome diseases of children, it being almost impossible to prevent the incessant rubbing and scratching. The method introduced by Dr. White, of Boston, is excellent. A skull-cap and mask, with holes for eyes, nose, mouth, and ears, is made from old cotton cloth, and securely fastened behind. The child's hands must also be fastened to the sides, either by pinning the sleeves to the underclothing, or by passing an old pillowcase over the child's head. The inside of the mask must be smeared with a diluted zinc ointment. The course of the disease will often be much shortened by applying black wash as an evaporating lotion for fifteen minutes twice or three times a day. When the child is very irritable, bromide of soda may be necessary for a few days, until the itching, which always subsides with the disease, is of less intensity. (Boston Medical and Surgical Journal, October 7, 1897.)

PAGET'S DISEASE OF THE SKIN.

Dr. Rolleston, before the London Pathological Society, brought up the subject of dermatitis maligna, or Paget's disease. Two cases were discussed, in both of which carcinoma had resulted. The first case was that of a man, aged 60 years, who had the glazed, raw condition of the skin above the pubes characteristic of the disease for eight years; two years ago nodules of carcinoma developed. The whole affected area was removed, and the man recovered. A somewhat similar case, in which the scrotum and penis were affected, had been described by Dr. Radcliffe Crocker. The carcinoma probably developed from the sebaceous glands, and not from the superficial layers of the skin. The sweats glands were dilated, but did not, as in Dr. Crocker's case, appear to be undergoing carcinomatous change. The growth was a spheroidal-celled carcinoma. The second case was that of a woman aged 45 years. The skin affection began eight years ago on the sinus of a mammary abscess, and had spread most extensively. A year ago carcinoma developed. The whole affected area, together with glands from the axilla, was successfully removed. Microscopically the carcinoma appeared to be squamous-celled, showing a transition to a spheroidal-celled type, but no keratinisation had taken place. The modification was probably due to the extensive inflammatory changes, which were also thought to be responsible for the extensive vacuolation seen in the epithelial cells. The carcinomatous growth had certainly not arisen in the mammary glands or in the ducts, as is often the case. It was suggested that Sir James Paget's name would best be honoured by associating it with the actual morbid lesion, a long-standing dermatitis of the nipple which he originally described, and not with analogous lesions.—*The Lancet.* (Journal of the American Medical Association, September 11, 1897.)

RINGWORM.—Treatment by Chloride of Sodium.

All scabs having been removed by soaking with olive oil, or poulticing, and, if on the head, the hair cut short, the diseased area is well rubbed with a saturated solution on a small piece of sponge. The medical man should do this himself once a day if possible, and the relatives once a day. It is a clean and painless application, but, like so many seemingly simple processes, yields its best results when the whole treatment is carried out by the medical man himself. In each of my cases I have made a microscopical examination before and after the treatment. The average duration of treatment was 16 days, the longest duration seven weeks (this case was an adult who would not persist in the treatment), the most rapid case seven days.

It will be noticed that the younger the patient the more easily this treatment seems to cure. (From Dr. C. E. Murphy's paper in the British Medical Journal, September 25, 1897.)

SCABIES.—Balsam of Peru in.

In the treatment of this affection, says a writer in the *Echo médical du Nord* for July 18, balsam of Peru is capable of rendering very great service. Various authors are of one accord regarding the mode of application, that is, painting the skin attacked by the acari. Opinions differ only regarding the soapy baths and lotions which are to be employed previously; some authors judge them necessary, others as absolutely useless. The writer considers the following method the best:—(1) Baths and lotions are unnecessary in persons whose skin is not only delicate, but in a sufficiently clean condition; in those, however, with a thick or dirty skin, baths and vigorous friction with black soap are necessary. (2) Before the patient goes to bed a quantity of balsam, varying from 450 to 750 grains, according to the intensity of the lesions, should be rubbed over the entire body, except the head, for about thirty or forty minutes. (3) On the following day a starch bath should be taken by persons in whom the pruritus persists, and a cleansing bath by those who feel no itching. The garments should be changed and disinfected. In cases in which the lesions persist, a second and even a third application of the balsam may be necessary, although this is rare. Contrary to what is the case with the sulphur treatment, says the writer, the balsam treatment has no contraindications, and it is as efficacious a treatment of scabies, as it is easy of application. (From the New York Medical Journal, August 29, 1897.)

SKIN RASHES.

The conclusions reached by Guirard are as follows:—(1) That medicinal eruptions are commonly limited to the face, afterward extending to the trunk symmetrically, and usually developing suddenly, as does erysipelas. (2) Unless they arise from very large doses, they generally develop without being associated with general systemic symptoms. He thinks that the absence of these symptoms aids us in separating these cases from the infectious diseases. (3) The eruptions due to drugs often change from one type to another, particularly those due to the balsams. (4) The eruptions are usually sudden in onset, and develop rapidly. I have drawn attention to the facts so admirably recorded in Guirard's paper, because I believe that error in diagnosis often arises from ignorance of them, and because my own experience is that drug exanthems are by no means so rare as we suppose. (From Dr. H. A. Hare's paper in the Medical Record, June 19, 1897.)

SKIN REMEDIES, INTERNAL.

Dr. Walsh summarises thus the general conclusions as to arsenic, mercury, and iodine, or of their compounds, as used in practical medicine:—(1) They are alterative, antiseptic, and poisonous. (2) They are epithelial irritants. (3) They are eliminated from the body by one or all of the various excreting organs. (4) They may cause multiple dermatitis. (5) In moderate doses they may cause diuresis or transient albuminuria, and in large doses, albuminuria, hæmaturia, and suppression of urine. (6) In large doses they have been shown experimentally to disorganise the kidneys in the lower animals, and a similar result often follows poisonous doses in man. (7) Their action appears to be greatly influenced by the susceptibility of the individual. To which may be added:—(8) They exercise an undoubted control over some skin diseases. These drugs probably affect the skin:—(1) Indirectly, through the influence of general nutrition, or through the nerves, and (2) directly, by local action. (From Dr. Coutt's abstract in the Medical Chronicle, September 11, 1897.)

AFFECTIONS OF THE EYE, EAR, THROAT, &c.

ADENOID VEGETATIONS.—Fatal Hemorrhage from Removal of.

Schmiegelow (*Monatsschrift für Ohrenheilkunde*, 1897, No. 3; *Centralblatt für Chirurgie*, August 14, 1897) reports a case, not his own, but occurring in the practice of a surgeon who had often done the operation without mishap. The patient was a boy, 12 years old, who showed nothing strikingly abnormal beyond a pronounced adenoid habitus and scrofulous glands in the neck. The operation was done without anæsthesia, and the ordinary Gottstein annular knife was used. Without any warning, a sudden gush of arterial blood issued from the mouth and nose. In spite of prompt tamponing and subcutaneous and intravenous saline injections, death occurred in a few minutes. The internal carotid artery was found to have been opened just in front of its point of entrance into the carotid canal of the pars petrosa ossis temporis. The author supposes that swollen glands had pushed the vessel forward so that the pressure of the knife caused its rupture, for it was not cut. (The Laryngoscope, October, 1897.)

AIROL IN THE OPHTHALMIA NEONATORUM.

Airol having proved very useful in the treatment of gonorrhœa, M. Ardin-Delteil, of Montpelier, was induced to make trial of it in a case of ophthalmia in a newly-born child, nitrate of silver,

which had been previously employed, having appeared to increase rather than to diminish the intense inflammation. He applied a 5 per cent. airol ointment made with vaseline, leaving it in contact with the mucous membrane for twenty minutes, and then washing it off thoroughly with a solution of boracic acid. After this an immediate improvement was manifest, the swelling and conjunctival secretion being greatly diminished by the next day, when a fresh application was made. The treatment succeeded in preventing suppuration, and in a week's time a successful result was achieved. (The Lancet, December 11, 1897.)

CONJUNCTIVA, SYPHILIS OF.

In dealing with primary and tertiary ulcerations of the eyelid, the palpebral conjunctiva was included. Besides chancres on the palpebral, the primary sore has been seen on the ocular conjunctiva, also in the folds of the fornix. In the process of cicatrisation the latter will, to a varying extent, cause adhesions of the palpebral and ocular surfaces of the membrane. Much deformity, however, is rare. A form of catarrhal conjunctivitis often occurs as a secondary manifestation preceding an attack of iritis. The ocular conjunctiva is much congested, and there is a muco-purulent discharge. It is owing to this catarrh that syphilitic iritis is sometimes neglected, for the one runs imperceptibly into the other; on the other hand, the redness of the eyeball may lead to the early use of atropine, and prevent an impending attack of iritis. The catarrh is usually symmetrical. Other secondary affections of the conjunctiva as condylomata, mucous patches, &c., I have never had the opportunity of witnessing. (From Mr. Juler's paper in The Lancet, December 11, 1897.)

CORNEAL ULCER.—The Galvano Cautery in.

My conclusions may be summarised:—To cure quickly and surely, cauterise. Unless inevitable from previous destructions of tissue, opacities do not result. Heat radiation is minimised by the galvano-cautery and the rheostat. Cocaine anæsthesia is perfect and applicable except for young children. With the electrode in contact with the cocainised cornea before the electric current is completed, cauterisation can be effected without the knowledge of the patient. (From Dr. C. S. Rodman's paper in the Medical Record, August 21, 1897.)

CYCLING, AND EYE DEFECTS.

Dr. Mirovitch (*Bull. de la Soc. Francaise*, March 11, 1897) draws the following conclusions:—(1) Before devoting one's self to cycling, it is absolutely necessary to have one's eyes carefully

examined. (2) Should inflammatory affections of the eye exist, of whatsoever nature, cycling exercises should be completely abstained from until definitely cured. (3) In the event of anomalies of refraction, it is indispensable to correct them. But myopes should refrain from riding excessively if they do not wish to see their sights weaken still more, and to be afflicted with retinal hemorrhage. (4) As much as possible, cyclists should use the upright position on their machines. (5) As hygienic precautions, it is well to wash the eyes, or, still better, to use douches of boracic water or a weak dose of carbolic lotion before and after riding. (From Mr. Dodd's abstract in Treatment, August 12, 1897.)

INFLUENZAL EAR AFFECTIONS.—Treatment of.

(By Dr. Gorman Bacon, *Archives of Pediatrics*, September, 1897.) In simple cases of acute otitis media, where the mastoid cells are congested, it is usual for the inflammation in the latter to subside readily under the use of the artificial leech or the application of the Leiter coil. In cases, however, which are due to influenza, we are compelled much more frequently to perforate the bone, on account of the virulent nature of the inflammatory process. It is of the utmost importance, in cases of influenzal origin, to make an early and a free paracentesis of the membrane, and to order frequent douching of the ear with warm antiseptic solutions. From a consideration of the subject, the author has come to the following conclusions:—(1) As the usual antiphlogistic treatment is less efficacious in cases of influenza otitis than in simple, uncomplicated cases, it is of the highest importance that a free incision should be made in the drum-head at the commencement of the disease, followed by frequent douching of the ear with antiseptic solutions. (2) When the mastoid cells are involved, and the disease has not yielded to the treatment commonly adopted in such cases, it is advisable to perforate the mastoid at an early date, on account of the destructive nature of the secretion, which otherwise may lead to a rapid caries or necrosis. (Mr. Milligan's abstract in the Medical Chronicle, September, 1897.)

MASTOIDITIS, BEZOLD'S, WITH PYÆMIC SYMPTOMS.

(By J. Hegetschweiler, *Arch. of Otology*, July, 1897.) In this case the patient, aged 64, complained of chills, and of pain in the left ear and in the head. This was followed, a few days later, by a sero-purulent discharge from the ear, at first mixed with blood. About a fortnight afterwards he had a chill, followed by other chills, and also by considerable pain in the left

shoulder and left lumbar region. When first seen by the author, the left shoulder was swollen and sensitive to touch; there was a profuse purulent discharge from the left ear, the membrane was perforated in the upper and posterior segment, and from the perforation pus exuded freely and rapidly. Externally, the mastoid process was unchanged, but was sensitive to pressure, especially towards its apex. The diagnosis made was that of otitic pyæmia. Whether the suppurating focus was in the lateral sinus or in the vein of the temporal bone (osteophlebitis) was at first not easily determined. The absence of any pulmonary symptoms, and the presence of metastasis in the left shoulder and lumbar region, pointed rather to an osteophlebitic origin. The patient refused to allow the mastoid process to be opened. For many weeks he lay in a state of great danger, but finally recovered after various metastatic abscesses had been opened and drained. The author remarks that his case confirms Körner's statement that "when in conjunction with an acute otitis media, and notwithstanding a free discharge, high fever occurs, with or without a chill, then is the supposition justified that it is a pyæmia from an osteophlebitis. And if, in addition, there are metastases in the joints, bursæ, or muscles, the diagnosis is certain." With regard to treatment, the case also offers an important indication that, when chills and fever are associated with an acute otitis media, the opening of the mastoid process is indicated when it is unaffected externally, or is not sensitive to touch. (Dr. Milligan's abstract in the Medical Chronicle, September, 1897.)

OPHTHALMIA.—Prevention of.

The essential element in dealing with an outbreak of ophthalmia is isolation. The afflicted should at once be separated from the others, and careful observation be made for the detection of fresh cases as they arise. The afflicted should be placed under appropriate treatment, and only be allowed to mix with the unaffected when a clean bill of health can be given them. The healthy ones should undergo periodic examination, in order that any fresh cases of ophthalmia may be promptly dealt with. The examination should include an inspection of the inner surfaces of the upper and lower lids. The surgeon should be mindful of the possibility of contagion being conveyed in the examination, and the use of antiseptics for his hands and instruments is indicated. The school premises should be inspected. The sleeping accommodation, with the cubic and floor space allotted and the sanitary conditions, should be looked into. The food, both as to quality and quantity, should be seen to—in fact, all matters that make for the health and well-being of children should

receive attention. But of prime importance is the prevention of all means by which contagion can in any way be conveyed to others. This involves a stringent supervision of the lavatory arrangements. Each child should not only have a separate towel, but the towels should be hung separately; basins may often, with advantage, be abolished, and washing substituted with running water from a tap. (From Mr. Simeon Snell's paper in the Quarterly Medical Journal, October, 1897.)

ROENTGEN RAYS.

The situation of the globe, encased in bone, deprives us, to a large extent, of any advantage from X-rays, but Sweet has been able to overcome the difficulties to a certain degree. Three horizontal rods of aluminium are applied to the outer and inner canthus and to the middle of the upper lid respectively, and an exposure made with the Crookes tube, held 13 in. away, opposite the parietal bone. Sweet uses sensitive film in preference to plate, this being thrust as far into the inner canthus as possible. Two exposures are made, one with the tube in line with the eye, the other at an angle of 25° with the horizontal plane. The apparatus is next attached to a support, a candle placed in the same relative position as the Crookes tube, and the rods must thus cast shadows on a surface held in the same relative position as the film, in exactly similar fashion. A small object is so placed that its shadow exactly agrees with that cast by the foreign body in the first portion of the Crookes tube, and the experiment repeated with the candle in the second position; the point of coincidence of the lines of shadow of the foreign body shows its precise situation in the eye.—*New York Medical Journal,* April 17, 1897. (Abstract in the Edinburgh Medical Journal, September, 1897.)

SCARLET FEVER.—Prevention of Ear Complications in.

Cleansing of the nares and naso-pharynx may prevent extension of suppuration to the Eustachian tube, with consequent otitis media and all its dangers. A good plan is to spray out the nostrils with a simple alkaline solution, and afterwards with an atomiser to spray the affected surfaces with the following:—Menthol, gr. xx.; eucalyptol, ℥x.; paraffin fluid, ad ℥j. These applications should be made every three or four hours if the discharge from the nose is abundant. (The Practitioner, July, 1897.)

SYMPATHETIC OPHTHALMITIS.

Sympathetic ophthalmitis is not a very common complaint, and, since antisepsis and asepsis are day by day reducing the inflammatory troubles subsequent to injury and operation to a minimum, so sympathetic inflammation of the eye is becoming

pari passu less frequent, and will, like hospital gangrene, upon this hygienic principle, lapse in time into a disease of the past. This to me seems obvious, and upon this fact alone—a clinical one—the cause of sympathetic ophthalmitis appears to be bacteriological. Not for an instant do I believe it to be a septic or pyogenic organism, but a special infective microbe. It is, however, unwise to speculate too much; workers in bacteriology will eventually place this subject on a more stable ground than hypothesis. (From Mr. Anderson Critchett's paper in the Edinburgh Medical Journal, 1897, p. 375.)

OBSTETRICS AND GYNÆCOLOGY.

ABORTION, INCOMPLETE.

By M. Maygrier (*L'Obstetrique*, July, 1897). *Methods of Interference.*—(1) By the use of the finger. This is regarded by the author as an excellent method to adopt. The finger is introduced into the fundus uteri, separating the placental attachments. If the cervix is insufficiently expanded to admit the finger, Hegar's dilators should be used. Sometimes loose placental fragments remain *in utero* after separation. In these cases a manœuvre recommended by Budin should be adopted. The uterus should be compressed between two fingers in the posterior fornix of the vagina and the hand above the pubes, and the placental fragments expressed. The uterine cavity should now be swabbed out with a strong antiseptic solution, and a tampon of iodoform gauze inserted into the vagina. (2) By the use of the curette. Although this instrument was used in a large number of these cases, M. Maygrier points out that its adoption is by no means free from danger. He quotes several cases in which the soft uterine wall has been penetrated by this instrument, and in some of these intestine was found to have been strangulated in the perforation. The use of any form of forceps is also to be condemned. If the curette is adopted, it should be of large size, and the cervix sufficiently dilated to admit of the finger being used as a guide. From these considerations the author is of opinion that digital removal of the fragments, combined, if necessary, with the manœuvre of M. Budin, mentioned above, is by far the safest method of dealing with cases of incomplete abortion. Finally, mention should be made of the administration of quinine to facilitate expulsion of the placenta or its fragments. This is a simple method, and in a certain number of cases is very effectual. (Abstract in Medical Chronicle, September, 1897.)

ATRESIA AND STENOSIS OF THE VAGINA IN LABOUR.

(By Dr. J. J. E. Maher.) The conclusions drawn from all cases, and especially the fatal ones, are:—(1) That from 70 to 80 per cent. of all these obstructions being found in the middle third or at the orifice of the vagina, a predisposing condition may be discovered in an increase of the muscular tonus at these points. (2) That the size of the opening does not necessarily jeopardise the result, inasmuch as none of the complete atresia cases proved fatal, and among the fatal cases four had openings large enough for the fingers to pass. (3) That the resistance can be overcome in every case is evidenced by the fact that only two of the ten cases termed cartilaginous proved fatal. (4) That the thickness, which in fifteen cases was stated as varying from 20 millimetres to that of the entire length of the vagina, is not an insuperable barrier, for only two of such dimensions were fatal. Of the other two mentioned with a fatal issue, one gave a measurement of 12 millimetres and the other was characterised as thin. (5) That there is practically no difference in the character of the stricture, the site, location of opening, central or not, resistance or thickness, between the congenital or post-partum cases, which amounted to 87 per cent. of the whole. (6) That the complication should not necessarily have been fatal, except possibly in two cases, one of contracted pelvis with shoulder presentation, and one of twin pregnancy. (7) That the various methods of treatment applied both to the obstruction and to the delivery do not make a bad showing, when it is remembered that many of these subjects were in labour for days before interference was attempted or allowed. (8) A grave error is a misconceived idea of the powers of nature. The author has met with three cases of atresia and stenosis. There was in all an inflammatory condition of the vaginal mucosa behind the barrier. (Medical Record, July 24, 1897.)

PUERPERAL DIPHTHERIA.

(By Dr. H. W. Longyear.) The Klebs-Loeffler bacillus is a potent factor in the etiology of puerperal infection, six cases being reported in proof of the position of the writer. The diphtheritic character of each case was determined not only by clinical evidence, but by bacteriologic examination made by the bacteriologist of the Detroit Board of Health. Five of the cases recovered and one died, the one death being the only case in which antidiphtheritic serum was not used. The writer recommends bacteriologic examination in all cases of puerperal infection, condemns curetting in all cases where a membranous exudate is present, and recommends the use of antidiphtheritic serum, the intra-uterine application of a strong solution of iodine and carbolic acid at the beginning of treatment, drainage

of the uterus by a tube, intra-uterine irrigation with antiseptic solutions, bi-hourly vaginal injections of hydrogen peroxide, and the usual supportive treatment with quinine and whiskey. In mixed cases of Klebs-Loeffler bacillus and streptococcus, he would first use the antidiphtheritic serum, and then, in twenty-four to forty-eight hours, begin the use of antistreptococcic serum. He believes that the true character of this form of infection has not been heretofore recognised, but that it will be found to be more or less prevalent in all localities in which diphtheria exists, if sufficiently critical examinations are made. (Journal of the American Medical Association, August 28, 1897.)

BLEEDING IN PREGNANCY AND LABOUR.

An interesting clinical lecture on this subject, by Freeland Barbour, is reported in the *Scottish Medical and Surgical Journal*, June, 1897. The author points out that in studying bleeding from an obstetric standpoint, it must be remembered that there are three periods in which it may occur, viz., in early pregnancy, in late pregnancy, and after labour; and that the causes are very different in the three periods. In early pregnancy there is no placenta, and bleeding occurs from separation of the decidua; in late pregnancy bleeding occurs mainly from the placental site; while after labour it may be either from the placental site or from some laceration. The mechanism of the arrest of uterine hemorrhage is as follows:—(*a*) By clotting, (*b*) by contraction of arterioles, which may be excited by ergotine or hot water, (*c*) by pressure on the placental site, (*d*) by uterine contraction and retraction. The author then discusses the indications for plugging the vagina in hemorrhage from the uterus. This method, though valuable under proper conditions, may be productive of great harm and danger when improperly applied. In early pregnancy, the vagina should be plugged for persistent bleeding, if the bimanual examination of the uterus shows that the ovum has not been expelled. Barbour explains the hæmostatic action of the vaginal plug in these cases, by the fact that "at this period the uterus cannot expand with blood," and, therefore, presumably, to prevent its escape from the uterus is sufficient to arrest the bleeding. But if the ovum has been expelled, and the bleeding proceeds from retained fragments only (the uterus being too small for the presumptive period of pregnancy), then plugging would be useless, for the only means of stopping it is to dilate the cervix and remove the retained fragments. In late pregnancy, the plug should be employed in placenta prævia, because it exerts a certain amount of direct pressure on the placental site, and thus arrests bleeding. But plugging the cervix is a far more efficacious plan, and this should be done if a Barnes' bag can be introduced, or a leg of the child brought

down. In accidental hemorrhage, on the other hand, Barbour thinks plugging is worse than useless, because the placental site is out of reach, and the only effect of the plug is to prevent the escape of blood from the uterus, and the patient may meanwhile bleed to death into her uterine cavity. He recommends rupture of the membranes in all cases of accidental hemorrhage. After labour, it is a fatal error to plug the vagina if bleeding comes from the uterus, for the reasons just given in the case of accidental hemorrhage. Reliance should be placed upon hot water injections (120°), bimanual pressure of the uterus, and ergotine. In rare cases, however,severe hemorrhage occurs from deep lacerations of the cervix, and these cases are best treated by tightly plugging the whole vaginal canal. But the source of the bleeding must be clearly made out before resorting to the use of the vaginal plug in post-partum hemorrhage. (Treatment, September 9, 1897.)

CÆSAREAN SECTION FOR CONTRACTED PELVES.

Olshausen contributed a paper upon this subject to the Moscow Congress (*Centralblatt für Gynäkologie*, 1897, No. 38), in which he reported twenty-nine Cæsarean sections performed upon twenty-four mothers for contracted pelves. The greater portion of these were for rhachitis. Twenty-nine children were born living, and twenty-six left the hospital living. The children were all much above the average size. Two mothers died, one of sepsis, the other from a towel left in the abdomen by an assistant. Most of the patients had a pulse above 120 for some days, while the temperature ranged from normal to 102°. His method of performing the operation is as follows:—The uterus is turned out of the abdomen and the abdominal wall temporarily closed behind it. The operator palpates the uterus to ascertain the site of the placenta. If he cannot do this, he makes an incision at the fundus to avoid the placenta. After extracting the child, the placenta is loosened and removed. The inner lining of the uterus is disturbed as little as possible. No elastic tube is placed about the cervix, as Olshausen thinks it exposes the child to danger of asphyxiation. After the uterus is emptied, the cervix is compressed by an assistant. To guard against bleeding, the patient is given ergotine before the operation. Catgut is the suture material employed. In view of the success of the modern operation, Olshausen thinks it absolutely indicated in many cases, and that its relative indication has a much wider scope. It remains the best method for speedy delivery, as in eclampsia. It is simpler than symphysiotomy, and its results are more assured. (Dr. E. P. Davis's abstract in the American Journal of Medical Science, November, 1897.)

CARCINOMA OF THE UTERUS.

Dr. W. W. Russell concludes a paper upon the "Operative Significance of Metastasis and Post-Operative Recurrences in Carcinoma of the Uterus" with the following propositions:—(1) Cancers of the vaginal portion of the cervix tend to advance out on to the vaginal walls, either superficially or beneath the mucous membrane, and, if the case is suitable for operative treatment, a wide removal of the vagina is indicated. (2) These growths are usually epitheliomata, and have little tendency to metastasis. If the local extirpation is complete, the prognosis is good. (3) Growths of the cervix are usually adeno-carcinomata, and from their situation are to be considered the most malignant of uterine cancers. The parametrium and bladder are the critical points, and the former should always be removed as completely as possible. (4) Adeno-carcinomata of the body are the most accessible to operative procedure, and give the most favourable prognosis. (Medical Record, August 7, 1897.)

CHILD-BEARING AND PHTHISIS.

(1) Conception may take place even in advanced pulmonary tuberculosis. (2) The disease is generally held in abeyance during pregnancy, although it may advance or even originate at this time. (3) Labour is short and easy in proportion to the severity of the disease. (4) During the puerperium a rapid advance, leading in some cases to speedy death, occurs; or the disease may originate at this time. In either case the temperature chart suggests puerperal sepsis. (5) Premature labour is more common the more advanced the disease, although pregnancy often goes on to full term, even in advanced cases. (6) The average weight of the full-term children, and their general condition at birth, is not markedly below that of children of healthy mothers, except in the rare instances of congenital tuberculosis. (The conclusions in Dr. C. W. Townsend's paper in the Boston Medical and Surgical Journal, October 14, 1897.)

DECIDUOMA MALIGNUM.

Dr. Lewers read a paper entitled "A Case of Primary Sarcoma of the Body of the Uterus (Deciduoma Malignum)" in a patient aged 24 years, treated by vaginal hysterectomy. The patient had been married a year, and believed that she had had three miscarriages at two months, six weeks, and three weeks respectively. She came under observation on account of persistent metrorrhagia, dating from the time of the first supposed miscarriage, about eight months previously. The case on admission was at first supposed to be one of incomplete

abortion; but, after dilatation of the cervix, examination showed that the symptoms were due to a malignant growth in the body of the uterus. Vaginal hysterectomy was performed on February 11, 1897; the patient recovered, and was free from any sign of recurrence in May, 1897. An examination of sections of the growth showed it to be a sarcoma, and essentially identical with what had been described under the name of deciduoma malignum. The author examined the evidence as to the patient having ever been pregnant at all. While admitting the impossibility of proving she had never been pregnant, he considered that, having special regard to the fact that menstruation had never been regular, there was some probability that conception had never occurred. (British Medical Journal, July 17, 1897.)

GESTATION, ECTOPIC.

(By Mr. Edgar.) Finally, there is the question between vaginal and abdominal section in cases of hæmatocele or hæmatoma, and of ectopic pregnancy in the latter half of its course. So far as my experience goes, I am, as I have already indicated, strongly in favour in such cases of the vaginal operation, provided a free opening be made under aseptic precautions, and the contents of the sac cleared out. The only exception I should make would be when the child is at or near full term. In such a case the difficulty of extraction *per vaginam* would counterbalance any advantages which might be otherwise gained. The advantages of the vaginal incision are manifest—viz., (1) the fact that drainage is secured at the lowest point; (2) that the patient is saved the risk of getting ventral hernia; (3) that the operation involves less shock; (4) that recovery is quicker; and (5) that the peritoneal cavity does not, in the cases we are considering, require to be opened, a thing not always easy to avoid in the abdominal operation. But what are the objections? One often stated is that, in cases of hæmatocele, by simply emptying the sac of its contents, you leave the gravid tube behind, and hence run the risk of a further hemorrhage or of future tubal disease. *A priori*, one would think that either or both of these results would be almost inevitable, and yet, though my experience in this mode of treatment has been fairly large, I have never seen either of them occur. However, what I should advise would be a careful bimanual examination with the two internal fingers in the sac, in order to find whether one of the tubes be enlarged or not. Should a tube be sufficiently large to be easily felt, and, therefore, presumably contain the placenta, I should then advise a further operation by the vagina if possible, by the abdomen if not, with the object of removing

the tube. If the tubes be not felt, I should be content with the one operation, but, of course, should keep a look-out for any hemorrhage at the time or subsequently. If such hemorrhage could not be controlled by packing, I should at once perform abdominal section; and in all vaginal cases of this nature, I prepare the patient beforehand for the abdominal operation, lest such should prove necessary. However, as I have already stated, I have never required to do so. (Glasgow Medical Journal, 1897, p. 267.)

GESTATION, TUBAL.

With regard to the diagnosis, it is important to recognise from these cases that a tubal gestation may be accompanied by other than the classical signs and symptoms. The typical picture of tubal gestation is as follows:—A patient who has not recently been pregnant, and whose menstruation has been regular, misses a period, perhaps two; she has no sickness, and probably does not think she is pregnant. She is seized one day, after some exertion, with severe one-sided pain, and feels faint, or even becomes collapsed. From this she rallies, and has a second attack after two or three weeks. Meanwhile she has a brownish-red vaginal discharge, dating from the first attack. If examined before or soon after the first attack, a swelling is felt to one side of the uterus in the position of the tube; it is tense, elongated, and in the vaginal fornix under it is felt a marked pulsation of the vessels. If examined later, the swelling is larger, but may be less defined if there has been outpouring of blood into the broad ligament or the pouch of Douglas. (From Dr. A. E. Giles's paper in the Transactions of the Obstetrical Society, June and July, 1897.)

LACTATION AND ANTIPYRINE.

After various researches made by M. G. Fleux, says a writer in the *Bulletin médical* for September 5 (*Tribune médicale*, September 22), he reached the following conclusions:—(1) Antipyrine certainly passes in a natural state into the milk. (2) Given in large doses, in two capsules, each containing fifteen grains, at intervals of two hours, it may be detected in the milk in from five to eight hours after its ingestion, and from nineteen to twenty-three hours afterward it cannot be discovered, so elimination lasts eighteen hours at the maximum. (3) The antipyrine during this time passes into the milk only in an excessively weak proportion, very much less than fifty parts in a thousand; it is only in exceptional conditions, for instance, when sixty grains are administered in sixteen hours, that it perceptibly reaches this proportion. (4) It does not influence in any way the quality of the milk, and, particularly, the lactose,

the caseine, or the fat. (5) It seems to have no action at all on the secretion, which always remains very abundant, provided the woman continues to nurse. (6) From the absence of general symptoms and from examinations of the weight, the infinitesimal quantity absorbed by the nursling does not seem to have any unfavourable action. (New York Medical Journal, October 23, 1897.)

MENSTRUATION, PAINFUL, AND APPENDICITIS.

A condition which may be misleading in the differentiation of appendicitis, is the sudden onset of pain occurring in young unmarried women of a neurotic temperament at the ushering in of the menstrual period. The onset is sudden, the pain is paroxysmal, and is accompanied by nausea. There may be more or less rigidity of the lower abdominal walls, which is most frequently bilateral. The presence and the degree of the rigidity of the abdominal walls depend upon the amount of congestion of the ovaries, and whether one or both are involved. The pain, at first paroxysmal, is most severe during the first day of the menstrual flow. After this it may become continuous, and, in some instances, last during the entire period. The tenderness and rigidity corresponds to the amount of ovarian congestion. If both ovaries are involved, the tenderness will be bilateral. The pain at the onset differs, however, from that of appendicitis, being non-inflammatory and localised from the beginning, while in appendicitis there is general abdominal pain, which later becomes localised in the right iliac fossa, while marked intestinal symptoms are present. (From Dr. Deaver's paper in the Medical News, October 16, 1897.)

PERINÆORRHAPHY BY FLAP-SPLITTING.

Dr. John B. Hellier (Leeds) records all of 30 cases in which he has employed the method, with the exact degree of success attained in each case. He has tried to obtain a recent report or inspection of each patient, with special regard to the question how far the sphincter ani has discharged its function, but the difficulty of finding old hospital patients is great in this district, and this part of the record is not complete. It is not necessary to describe the operation in detail, but one may remark that in most of the cases which come up for operation the sphincter ani is more or less damaged, and there is always a cicatricial line where the posterior vaginal wall meets the anterior rectal wall; and the operation consists essentially in splitting the recto-vaginal septum along this line, and then turning up a flap consisting of the posterior vaginal wall, and turning down a flap composed of the rectal wall, thus making a separation of rectum

from vagina. The operation is completed by bringing the tissues together laterally between the separated flaps, so as to form a new perineal body. I have been accustomed to make this dissection carefully and freely, carrying my incisions probably a little deeper than is usually directed, and stopping the hemorrhage by forcipressure or sponge pressure before closing the wound. This makes the operation a little longer, but helps the ultimate result. I usually suture the rectal edge with continuous chromic catgut, and sometimes the vaginal edge also. The following is the routine that has been followed in all the cases:—The patient's bowels are cleared by castor oil given on the day before operation, and by a copious enema on the morning of the day. She is kept on slop diet from the day before operation to the eighth day, during which period the bowels do not act. Then a good dose of castor oil is given, and an enema of olive oil thrown into the rectum. This produces a soft evacuation, after which the stitches are removed. The patient's knees are tied together, and the catheter is passed thrice daily for eight days. If there be any vaginal discharge, a small packing of gauze is inserted into the vagina and changed as often as necessary, and a vaginal douche is given if there is discharge. Only one case was a complete failure. The patient was a most unpromising subject, obese, and with florid congested countenance, and there was a very large rectal prolapse. In another case the anterior part gave way, but the incontinence of fæces was cured. In the remaining cases, all, or nearly all, the opposed surfaces united. On removing the sutures, it will not always be found that the whole length of the wound has united by first intention, but if it holds at the ends and at most points in the centre, union by granulation will complete the cure. (From Dr. Hellier's paper in the Quarterly Medical Journal, July, 1897.)

PERITONITIS AFTER ABDOMINAL SECTION.

Peritonitis is now happily a very rare event. Its advent is often most insidious. The first symptom to excite alarm is persistent vomiting. At first the ejected matter is a yellowish frothy fluid, subsequently it becomes a dark green, and finally almost black. Retching and vomiting after the anæsthetic may continue for twenty-four hours, or even longer. It does not necessarily indicate peritonitis, even if it persists for several days. Similarly, as already mentioned, tympanites may be present, and yet not be associated with peritonitis. Nor does the temperature give any characteristic indication, for I have seen many cases in which it has remained low throughout. But should there be a persistent acceleration of pulse, accompanied by vomiting and abdominal distension, then danger must be

apprehended. The patient, moreover, has a jaundiced and haggard expression, the mental condition is depressed, and the tongue is red and dry, though sometimes it remains moist. No flatus is passed per rectum. When peritonitis has been recognised, the question of treatment at once arises, and here I may say at once, if the peritonitis is general, active treatment is of little avail. Some operators still think that free purgation is of use, and that it may prevent peritonitis; there is no proof whatever that such is the case. Can any good be gained by reopening the wound and flushing out the peritoneal cavity? My experience is that the proceeding is perfectly useless. (From Mr. Mansell Moullin's paper in the British Gynæcological Journal, August, 1897.)

PLACENTA PRÆVIA.

Platzer (*Centralbl. für Gynäkel.*, August 14, 1897) presents a clinical report of forty-six cases of placenta prævia. The results were as follows:—(1) After expectant treatment, that is to say, by tampons or artificial rupture of the membranes (23 cases), the mortality of the mother was 0, that of the child 39 per cent.; really, however, only 18 per cent., as two of the births were premature, and in four cases the child was already mascerated. (2) After podalic version and spontaneous expulsion (eight cases), the mortality of the mother was 0, that of the child, excluding two mascerated fetuses, 83 per cent. (3) After version and immediate extraction (13 cases), the mortality of the mother was 23 per cent., that of the child 46 per cent. From these statistics, it appears that extraction is unfavourable for the mother, and ought, therefore, to be rejected, even though it is somewhat more favourable for the child. (Medical News, November 13, 1897.)

POSTCLIMACTERIC CONDITIONS SIMULATING UTERINE CANCER.

Dr. M. Rosenwasser, of Cleveland, Ohio, read a paper on this subject. The writer commended the teaching that irregular hemorrhages and sero-sanguinous discharges, whether occurring during the parturient age or long after the menopause, are good and sufficient reasons to suspect malignancy. We carefully watch for early symptoms, and by their detection occasionally succeed in removing the disease while it is still local. On the other hand, we sometimes are caught off our guard when confronted by postclimacteric cases presenting all the classical characteristics of advanced malignant disease. The text-books are deficient in not sounding a note of warning against possible errors in the late stages. The so-called classical symptoms may be due to other (not malignant) conditions of the genital tract.

Owing to effacement of the vaginal portion of the cervix in old age, the differential diagnosis is in most cases limited to corporeal diseases of the uterus. Before the diagnosis of corporeal cancer can be made, other diseases must be excluded. The conditions which are likely to simulate advanced cancer are the following:—(1) Senile vaginitis; (2) foreign bodies in the vagina; (3) gangrenous fibroids; (4) atrophic, senile, or postclimacteric endometritis; (5) postclimacteric pyometra. Of these conditions, the last is especially liable to lead to errors. In conclusion, the author called attention to the singular fact that in the presence of the essential predisposing conditions—age, low vitality, cicatricial tissue, adhesions, chronic inflammation, and irritating discharges—cases of transformation into malignant disease are either unknown or exceedingly rare. (Medical Record, October 2, 1897.)

POSTERIOR-OCCIPITAL POSITIONS OF THE FŒTAL HEAD.

Stewart, in an original communication to the Cincinnati Obstetrical Society, on this common complication of labour, suggests some original points of management, which he has found useful from personal experience, and after a careful study of the condition. Should the position be diagnosed early, before rupture of the membranes, the object to be attained is engagement of the head in the flexed condition. To attain this, he recommends, first, bringing the dorsum of the child forward by abdominal manipulation. If the head be disengaged, the position is at once changed to occipito-anterior, but if engaged, the rotation of the trunk alone and its retention in this position, he considers a strong factor in promoting the subsequent rotation of the vertex. Should dilatation of the cervix be well advanced, and the anterior fontanelle low, the artificial rotation of the occiput is to be assisted by pressing in front of the fontanelle with two fingers in the vagina (thus promoting flexion), and at the same time pushing the sinciput backwards; in some cases he has succeeded, by the introduction of the whole hand into the vagina, in grasping the occiput, and bringing it forward. If the labour be far advanced, and the head arrived extended at the pelvic floor, axis-traction forceps are to be applied, and a combined traction and flexion exercised. This is to be attained by lifting the application handles of the instrument well forwards, and at the same time pulling the head in the direction of its long axis, a procedure which necessitates the wide separation of the traction rods from the shanks. The forceps are thus converted into a lever of that class in which the power is between the weight and the fulcrum. The shanks, held well forward in the one hand, represent the fulcrum; the child's head, between the blades, the weight; and

the other hand of the operator, acting through the traction rods, the power.—*Am. Pract. and News*, Louisville, May, 1897. (Dr. Haultain's abstract in the Edinburgh Medical Journal, July, 1897.)

PRURITUS VULVÆ.

Dr. Herman read a paper before the Hunterian Society. He first stated that though pruritus is a common complaint, yet it is important, as it causes great local suffering, and indirectly, by preventing sleep, injury to health. The causes of pruritus were divided into five classes:—(1) Adventitious, due to pediculi, dirt, worms, and pessaries. (2) Skin diseases—eczema, herpes, furuncle, follicular urticaria, and diabetic dermatitis, which has been shown to be due to neither saccharine urine nor sweat. (3) Irritating discharges—gonorrhœa, cancer, and senile endometritis—and also cases where no visible change is seen. (4) Venous congestion, due to heart, lung, or liver disease. (5) Nervous. In Class 1 he advised unguentum hydrargyri ammoniatum for pediculi, absolute cleanliness, and changing of material of pessary. Class 2: Eczema usually affects fat elderly women and those who are pregnant; possibly it depends on a parasitic micro-organism; in diabetes it is especially frequent. Treatment in the former consists in warm hip-baths with liquor carbonis detergens added, and powdering the parts with boric acid. In the latter, general treatment is required. Herpes zoster is not amenable to any kind of treatment. Follicular pruritus is best treated by squeezing out the contents of the follicles, and applying a germicide lotion such as corrosive sublimate, 1 in 2000. Urticaria is very rare. Class 3: Irritating discharges should be treated by sedative and antiseptic washes to the vagina, followed by sedative powders to the vulva, such as a saturated solution of borax and dermatol powder and boric acid. When these fail to give success, a strong carbolic acid lotion, 1 in 7 will, in some cases, completely cure or give great relief. Class 4: Pruritus is found in pregnancy and in corpulent persons with varicose veins, and those suffering from heart, lung, or liver disease. The treatment is practically the same as in Class 3. In Class 5, pruritus in aged women is sometimes a symptom of degenerative changes in the nervous system, and treatment usually fails. (Report in The Lancet, November 20, 1897.)

PYOMETRA COMPLICATING CANCER OF THE CERVIX.

Dr. Walter W. H. Tate read a paper, before the London Obstetrical Society, on three cases of pyometra complicating cancer of the cervix. According to Bürkle's statistics, compiled

from German operators, pyometra occurred as a complication of cancer of the cervix in seventeen out of a total of 273 cases, giving a percentage of 6·2. Dr. Tate had met with this condition in three out of twenty-eight cases of vaginal hysterectomy for cancer of the cervix. *Case 1.*—The patient was a widow, aged 60 years, who had had nine children. The menopause occurred at the age of 45 years. There was a history of slight discharge, occasionally blood-stained, for two years, which had become offensive in character for the last six months. The cervix was greatly enlarged and infiltrated with cancer, which formed a large mass filling the upper part of the vagina. Vaginal hysterectomy was performed on July 9, 1897; the uterus contained three or four ounces of most fœtid pus. The patient recovered. *Case 2.*—This patient was a married woman, aged 61 years, who had had nine children. The menopause occurred at the age of 45 years. There was a history of slight blood-stained vaginal discharge for nine months, more profuse for three weeks before admission to hospital. The cervix was hard and infiltrated with cancer; there was a shallow ulcer around the external os. The uterus was not apparently enlarged. Vaginal hysterectomy was performed on July 30, 1897; the cervical canal was practically occluded, and the uterus distended into a sac, which contained about three ounces of very fœtid pus. The patient recovered. *Case 3.*—This patient was a married woman, aged 65 years, who had had seven children. The menopause occurred at the age of 41 years. There was occasional blood-stained discharge for four years, at intervals of a fortnight; for five weeks before admission the discharge was purulent and offensive. The cervix was enlarged and very hard, with an irregular ulcerated surface towards the vagina, which bled very freely. On examination, the body of the uterus was found to be enlarged and elastic, obviously containing fluid. Vaginal hysterectomy was performed on August 26, 1897. The uterus contained three and a quarter ounces of very fœtid pus. The patient recovered. (The Lancet, December 11, 1897.)

RUPTURED UTERUS, FOLLOWED BY ABDOMINAL SECTION.

Dr. John Phillips showed, as a fresh specimen, the extensively lacerated uterus of a woman recently in labour at the sixth or seventh month of pregnancy. The laceration extended from the fundus right down to the "Bandl ring," and the whole of the left broad ligament ovary and Fallopian tube had been pulled down by the practitioner in attendance, under the impression that he was removing an adherent placenta. The patient was aged 31, and labour began on the Saturday at

5 a.m. At 7.45 p.m. the os was dilated to about the size of a florin, and the left foot of the fœtus was found lying in the vagina. The os was soft and dilatable, but the pains continued until 11 p.m. without effecting much progress. The other leg was then brought down, and ultimately the body passed, leaving only the head inside the uterus, gripped by this Bandl ring. An attempt at artificial extraction failed, and next day the hand was passed up to the constricting band under chloroform. This was dilated, and the child was finally born at 1 a.m. The uterus did not contract well, and hemorrhage set in, so the practitioner passed his hand into the uterus and felt a rough edge. He thought it must be placental tissue. As he could not get it away, he grasped the membranes (?) and pulled them down, when he recognised the broad ligament, &c. The patient became collapsed, but rallied somewhat, and later the placenta was found lying in the vagina. When Dr. Phillips saw her, the abdomen was tense and slightly swollen. The cervix and vaginal fornix were intact, but the finger passed through the rent into a large cavity. He did abdominal section, and removed the uterus, leaving in a glass drainage tube for twenty-four hours. The patient was doing well. Dr. H. G. Spencer said he had several times seen similar lacerations without any interference whatever, sometimes even in women who had previously borne children. He questioned whether removal of the uterus was the best treatment in every such case, at any rate, when the child had not escaped into the peritoneal cavity, such patients being usually too ill to bear the shock of operation. Dr. Cullingworth agreed with Dr. Spencer on the question of removing the uterus in these cases as a routine measure, but in this particular case he said he would probably have acted as the author had done. In presence of persistent hemorrhage, there was really no alternative. (From Report of Obstetrical Society, in the Medical Press and Circular, October 13, 1897.)

SENECIO.

Experience leads me to agree with Murrell that "senecio is not an ecbolic." I also agree with Murrell that the drug will not provoke menstruation in cases of marked anæmia or advanced phthisis, but will do so in cases of functional amenorrhœa. Murrell, however, thinks that senecio increases the quantity of the discharge, while my own cases point to the opposite conclusion. The views of Bardet and Bolognesi are identical with my own on these points, though I differ from their views as to the mode of action of the drug. As to dysmenorrhœa, Murrell, Dalché, and Heim found the drug useful in certain cases, while I am inclined to agree with Bardet and Bolognesi

that it will not be found of much use for the relief of pain. I think that the pharmacology and chemistry of the plants of this genus should be worked out by competent hands, and that those interested in disorders of menstruation will find the drug worthy of a clinical trial. (From Dr. W. E. Fothergill's paper in the Medical Chronicle, 1897, p. 418.)

SERUM TREATMENT IN PUERPERAL INFECTION.

To summarise the value of the serum treatment, it may be said:—(1) The benefits of the serum treatment of puerperal infection cannot, as yet, be said to be proved, although it gives promise of much value. The proof practically rests in the demonstration of its bactericidal, as well as its antitoxic properties. (2) It should be adopted early, and be continued after the grave symptoms have subsided. (3) Its value is apparently diminished in mixed infections, although in these cases it is not to be considered useless. (4) In no case should treatment be confined to the serum injection. It must be associated with local applications, such as uterine douching and curetting, and free general stimulation; also, if need be, with induced hyperleucocystosis, by the injection of nucleine. (5) If possible, in all cases a culture diagnosis should be made to assist in furthering scientific investigations from a clinical standpoint. (From Dr. Haultain's paper in the Edinburgh Medical Journal, August, 1897.)

SYMPHYSIOTOMY.

In the *Annales de Gynécologie*, 1897, vol. xlvii., Pinard reports the experience of the Baudelocque clinic for the year ending December, 1896, in symphysiotomy. During this time, 95 patients were confined in the clinic who had some pelvic abnormality. Of these, 68 were delivered spontaneously, while in 27 cases operative interference was practised. Of these, 14 were treated by symphysiotomy and extraction. These cases are narrated in detail, some of the operations having been performed by other members of the staff. Many of the cases were emergencies, the patients having been brought to the hospital after unsuccessful attempts had been made to deliver with forceps. Several of these cases were multiparæ. An analysis of these operations shows that seven were done upon primiparæ, and seven upon multiparæ. In all the presentation of the fœtus was vertex. Thirteen of these patients had rhachitis pelves, and one had a rhachitic pelvis, with luxation of the hip-joint. After the symphysiotomy, 13 of the children were extracted by forceps and one by version. The results were:—In 14 cases, 12 mothers and 10 children recovered;

two women and four children perished. Of the fatal cases among the mothers, one died of pneumonia, the other died of streptococcus septic infection, autopsies having been held in each case. The mortality among the children was largely owing to pneumonia, caused by inspiration during prolonged labour. (American Journal of Medical Science, July, 1897.)

SYPHILIS AND PREGNANCY.

By Dr. Murray (*Medical News*, June 19, 1897). As regards the limit when the disease may affect the child, it is difficult to state any time, for in two cases of Murray's, the child died from congenital syphilis twelve years after the primary sore in the infected parent. The diagnosis is often difficult, owing to the primary sore being invisible or escaping notice in women. The father should be examined carefully whenever possible. *Treatment.*—This is easy to carry out if both parents are aware of the disease; but if the mother does not know of it, and the father will not agree to an explanation, treatment is difficult to carry out. The method of treatment suggested by Murray is that recommended by Fournier, viz., inunction. When the infant is born it is best treated through the mother's milk, by the administration of mercury to her. When the infant grows older it is sufficient to place mercury ointment on a flannel binder. In case the mother is too weak to suckle her child, it must be brought up by hand, a wet nurse being, of course, not admissible. (From abstract in Treatment, 1897, p. 331.)

TUMOURS, FIBROID, COMPLICATING PREGNANCY AND LABOUR.

At a recent meeting of the Obstetrical Society of France (*Gazette Hebdomadaire*, 1897, No. 34) Keiffer read an extended paper upon this subject, in which he drew the following conclusions:—Hysterectomy in fibroid uteri in pregnant patients is demanded for four indications:—(1) When, independently of pregnancy, the fibroid tumour would make hysterectomy justifiable; (2) when the fibroid occupies such a position that labour would be impossible; (3) when the tumour is degenerating, or suppurating, and when a retained placenta complicates the case; (4) hysterectomy should be performed in a case of labour complicated by fibroid tumour of the uterus after the child has been extracted by Cæsarean section. (American Journal of the Medical Sciences, August, 1897.)

TUMOURS, PELVIC, IMPACTED AND ADHERENT.

To summarise briefly:—Impaction, and especially adhesion, of an intrapelvic tumour invests such a growth with an importance out of proportion to its size. The first indication of the

condition may be the occurrence of certain pressure-symptoms referable to the rectum and bladder which are often erroneously referred to diseases of these viscera. Local pain, if present, is more or less constant, and is often of a neuralgic character. Such symptoms suggest the propriety of a careful examination. The prognosis and indications as to treatment are determined by a thorough appreciation of the size, character, and site of the tumour, and its attachment to adjacent organs. The possibility of pregnancy, with the added risks entailed, is always to be considered. The treatment is surgical, celiotomy being preferable except in the presence of suppuration. In early pregnancy there is a choice between removal of the tumour and the induction of abortion, with subsequent celiotomy. At a later stage the most heroic method is really the most conservative as regards both mother and child. If the tumour is first discovered during parturition, there is often no alternative but a prompt Cæsarean or Porro operation. (From Dr. Henry C. Coe's paper in the Medical News, October 30, 1897.)

TWIN PREGNANCY, MATERNAL RISK IN.

Stephenson, of Aberdeen, in his "Studies in Practical Midwifery" (*Scottish Medical and Surgical Journal*, No. 7, 1897), discusses the subject of twin pregnancy, and especially the maternal risks. In general, the maternal mortality is more than double that of single pregnancy. This arises with some patients from convulsions—one in 81 cases against one in 363 normal cases. Hemorrhage is five times more frequent in twin than single births, especially in the third stage of labour. The placenta is adherent twice as often in twin as in single births. Retention of the placenta necessitating interference was six times more frequent in twin than single births. Adhesion of the placenta was present in more than half the cases. Stephenson urges very sensibly that twin labour is an incomplete labour after the first child is born; the womb is exposed to incomplete retraction, and hence to hemorrhage; no time should be lost in completing the delivery, preferably by version, thus avoiding risks of hemorrhage. Between 6 and 7 per cent. less cases of twin labour end in a given time than with single births. As a result, care must be taken to avoid the dangers which delayed labour occasion. In general, twin labour demands careful external examination of the patient to determine the presence of the second child. Unless the second follows quickly after the first twin, version should be done, and the second twin delivered. All possible precaution should be taken to avoid failure of uterine retraction and hemorrhage. (American Journal of Medical Science, 1897, p. 489.)

Medicine.

GENERAL MEDICINE AND THERAPEUTICS.

Art. 1.—TEN YEARS' EXPERIENCE OF THE COLD-BATH TREATMENT OF TYPHOID FEVER AT THE BRISBANE HOSPITAL.

By F. E. Hare, M.D.,
Late Resident Medical Officer.

Brand's system of cold bathing was commenced on January 1, 1887. From that date to December 31, 1896, every case admitted has been subjected to the operation of his rule, unless distinctly contraindicated. The results of the first three years of this period have already been published (*The Practitioner*, March, 1891), and the cases therein referred to are consequently included in the complete statistics for the decade. The results obtained before the introduction of the bath treatment, which have already been published, may here be conveniently reproduced:—

Table 1.

Year.	Cases.	Deaths.	Mortality.
1882, from May 15	147	25	17·0 p.c.
1883 ,, ...	273	40	14·6 p.c.
1884 ,, ...	575	89	15·5 p.c.
1885 ,, ...	369	49	13·3 p.c.
1886 ,, ...	464	68	14·6 p.c.
Totals	1,828	271	14·8 p.c.

It is plain that during the expectant period in Brisbane the results obtained differed but little from those of the large

hospitals of England and the United States at the present time. The results of the ten years' bath period are as follows:—

TABLE 2.

Year.	Number of Cases of Typhoid.	Deaths.	Percentage Mortality.
1887	239	27	11·3
1888	339	23	6·8
1889	595	42	7·0
1890	160	16	10·0
1891	137	7	5·1
1892	104	7	6·7
1893	50	2	4·0
1894	79	1	1·3
1895	69	8	11·6
1896	130	10	7·7
Totals	1,902	143	7·5

There has, therefore, occurred a reduction in the mortality of the disease of practically 50 per cent.; or, in other words, about 7 of every 100 cases admitted have been saved by the bath treatment. This result harmonises exactly with the latest conclusion of Osler on this subject. He says ("Johns Hopkins Hospital Reports, 1895") "The cold-bath treatment, rigidly enforced, appears to save from six to eight in each century of typhoid patients admitted to the care of the hospital physician." In order to correctly gauge the value of these figures, it is necessary again to refer briefly to the fallacies which tend to inhere in all typhoid statistics. These arise mainly from—(1) Paucity of data; (2) variations in extension of the term "typhoid"; (3) errors in diagnosis; (4) differences in the age and sex constitutions of the series compared; (5) variations in the severity of the disease in different countries, climates and districts, and in different epidemics in the same places.

(1) Paucity of data would appear to be the main stumbling-block of typhoid statisticians. The possible error due to this cause is found by Poisson's formula. Tested in this way, the expectant series of 1,828 cases shows a possible error of but 2·3 per cent. in its mortality rate. Similarly the bath series of 1,902 cases has a possible error of but 1·7 per cent.—*i.e.*, in any future series of cases of equal size the limits of the mortality rate will be *cæteris paribus* between 9·2 per cent. and 5·8 per cent. Of course, the probable error is vastly less, but either is quite insufficient to account for the fall in death-rate.

(2) Variations in the extension of the term "typhoid" are a frequent and serious source of fallacy. In making up the statistics of the first three years, cases which were obviously

febricular, together with cases which were apparently typhoid, but which convalesced before the tenth day of the fever, were all excluded from the list. The result was that while 1,173 cases appeared as typhoid with 92 deaths, 201 cases of doubtful fever, or 14·6 per cent. of the whole, in all of which recovery took place were excluded. During the last seven years, however, an even more stringent exclusion has been made. While 1,902 cases of typhoid have been treated during the decade with 143 deaths, the exclusions of doubtful cases, which all recovered, have during the same period amounted to 616, or nearly 25 per cent. of the whole number admitted.

(3) Errors in diagnosis do not in the case under consideration affect the statistics at all. The lists are prepared from the recorded diagnoses, which are entered only at the discharge or death of the patient.

(4) Differences in the age and sex constitution of the series compared. The first is not of great importance in typhoid, except, perhaps, at the two extremes of life. During the last seventeen months of the expectant period 1·1 per cent. were under ten years and 4·3 over forty. Of the 1,902 cases in the bath period, ·7 were under ten, and 6·7 over forty. As far as it goes, then, age constitution tells against the latter. Sex constitution in the two series is almost identical. Of the 1,828 cases in the expectant period, 668, or 36·5 were females; of the 1,902 in the bath period, 714, or 37·5, were females.

(5) Variations in the severity of the disease in different countries and districts do not concern the present inquiry, since all the cases in either series came from the same districts and were subject to the same climatic conditions. There remain only, therefore, for consideration variations in severity of different epidemics. Without denying the existence of this epidemic influence, it may be permitted to contend that it has been greatly over-estimated. It has been shown (*The Practitioner*, March, 1891) that in the four complete fever seasons, before the introduction of cold bathing, the natural seasonal variations in mortality did not amount (with one exception, where the numbers were inconsiderable) to 1 per cent.—a variation well within limits of error due to paucity of data. Again, on reference to Table 2, it will be found that the annual mortality rate varies from 11·6 per cent. to 1·3 per cent. That this, however, is due to arithmetical and not to epidemic reasons can be easily demonstrated.

If from the whole decade we strike out the first six months, during which the treatment was but inefficiently carried out, we have a series of 1,731 consecutive cases, extending over a period of nine and a half years, with 122 deaths. If, now, instead of

into years, this series is divided into three equal groups of 577 cases each, we obtain the following:—

Periods.	Number of Cases.	Deaths.	Percentage Mortality.
July 1, 1887, to February 21, 1889	577	42	7·3
February 22, 1889, to October 14, 1890	577	40	6·9
October 15, 1890, to December 31, 1896	577	40	6·9

The series being sufficiently long to exclude errors due to paucity of data, the variations have practically disappeared; there is, instead, a remarkable uniformity in the results.

The most important result of the systematic employment of Brand's treatment is the alteration it has effected in the constitution of the mortality list. The statistics of the first three years of the decade led to the conclusion that the treatment was ineffectual to reduce the mortality from perforation and hemorrhage, and that the vast bulk of the reduction was due to the prevention of those complications and modes of death which, being more or less common to the febrile state, however induced, are termed pyrexial. Further experience has amply verified this. Of the 1,902 cases in the ten years' bath period, 56 died of perforation, or 2·9 per cent.; 23 of hemorrhage, or 1·2 per cent.; while 64, or 3·4 per cent., succumbed to other causes. The following table shows the modification which has been imprinted upon the constitution of the typhoid mortality list by the introduction of the cold-bath treatment:—

Causes of Death in Typhoid.	According to Murchison.	Brisbane Hospital before Introduction of Bath Treatment.	Brisbane Hospital after Introduction of Bath Treatment.
Perforation	3 p.c.	2·9 p.c.	2·9 p.c.
Hemorrhage	1·4 p.c.	1·88 p.c.*	1·2 p.c.
Other causes	12·8 p.c.	9·73 p.c.†	3·4 p.c.
Total mortality ...	17·2 p.c.	14·5 p.c.	7·5 p.c.

* The percentage of fatal hemorrhage is rather too high.

† Similarly, that of deaths from other causes is probably a little below the true average. This column was only made up from 586 cases.

Thus, almost the whole of the reduction in mortality, amounting to 7 in every 100 admitted, falls upon the third group of causes; or, in other words, perforation and hemorrhage, which together used to cause only about one-fourth of the total deaths, now, under the bath treatment, cause more than half, and this in spite of the fact that they are, if anything, actually less fatal.

This fact has an important bearing upon the comparative mortality of the sexes. Statistics on a large scale show that, under ordinary treatment, the female mortality is slightly higher than the male. In Brisbane, during the expectant period, 1,160 men and 668 women were admitted. Of the former, 164 died, a mortality of 14·14 per cent.; of the latter, 107, a mortality of 16·02 per cent. The difference is in spite of the admitted fact that men are about twice as liable as women to succumb to perforation and hemorrhage. It follows, therefore, that the female wards offer a better field for the cold-bath treatment than the male. During the bath period, 1,188 males and 714 females were treated. Of the former 103 died, a mortality of 8·7 per cent.; of the latter, 40, a mortality of 5·6 per cent. The reduction in the female death rate is thus nearly twice that of the male, and this is due almost solely to the greater incidence (nearly double) of perforation and fatal hemorrhage upon the latter sex.

The series of 1,902 cases include every case admitted into the Brisbane Hospital during the decade, which, at its termination, could fairly be considered to be typhoid, omitting only 23 cases still under treatment when the statistics were compiled. It includes, therefore, many cases that were not bathed at all, because such treatment was contraindicated; many more that were not bathed because the pyrexia was insufficiently high to require it under Brand's rule; many that were hopeless on admission; some that died from old-standing or intercurrent diseases during the course of an attack of typhoid; and some that were only diagnosed at the necropsy. The death rate, therefore, is essentially a hospital typhoid death rate, and is quite distinct from that which might be expected were only cases suitable for the bath treatment selected.—*The Practitioner, September*, 1897.

2.—DIET IN TYPHOID FEVER.

By Frederick C. Shattuck, M.D.,
Jackson Professor of Clinical Medicine in Harvard University, Boston, Mass.

[In the last number of the *Retrospect* we printed a paper by Dr. Barrs on this subject. Dr. Shattuck also advocates a less restricted diet than the one usually allowed.—E.F.T.]

When typhoid fever kills it does so either by perforation or exhaustion, the proportion of the former being estimated at 5 to 10 per cent. The main factors in producing the exhaustion which causes the death of at least nine-tenths of the fatal cases are toxæmia, continued fever, diarrhœa and vomiting and intestinal hemorrhage. The heart is ordinarily the best index of

the presence and degree of exhaustion, and the most frequent serious pulmonary complication, hypostasis, in its various forms, degrees, and consequences, is the direct outgrowth of the cardiac weakness. Moreover typhoid fever is not short and sharp like pneumonia, but of long course, and usually attended with decided, often with very great wasting of the muscular and fatty tissues. Under the old doctrines as to inflammation fever was an unfailing indication for depletion; directly by venesection, pukes, sweats, and purges; indirectly by starvation. Indiscriminate direct depletion is now a thing of the past, and since the time of Todd the fact has gradually been more and more clearly recognised that the febrile state is often an indication for more, rather than less, nourishment, with selection as to quality rather than diminution as to quantity. In the shorter essential fevers a few days' starvation can not do much harm, and may even be of great service with a certain class of patients. But suppurative fever, for instance, whether of tubercular or other origin, especially if chronic, we feed to the largest limit; and we do this because we treat the condition and not the disease, individualising our cases. Since our knowledge of gastric chemistry has been enriched by the adaptation of the soft catheter to another hollow viscus at the opposite extremity of the abdomen, a more complete explanation has been afforded for the fact which we knew by practical experience before, that gastric digestion is often weakened in the febrile state. But the same practical experience teaches us that it is not always so, or very materially so, and when theory and practice conflict the former must prevail. Have we not fully escaped from the domination of the old doctrine as to the lowering treatment of inflammation, or are there valid reasons why we should be less bold in feeding our typhoid patients than our chronic febrile consumptives? Three such reasons deserve special consideration. In the first place, typhoid is far more frequently a self-limited disease than is phthisis; but the fact of self-limitation does not seem to me to warrant us in underfeeding, for the less the patient loses the less does he require to regain. In the second place, typhoid has constant intestinal lesions which may bleed or perforate and which may be accompanied by a general catarrhal state of the intestinal tract. I may perhaps add here that diarrhœa is not nearly as constant a symptom in typhoid fever as the books lead students to believe. In at least 50 per cent. of my hospital cases no diarrhœa was present at any time. We must therefore have reference to the local intestinal lesions as well as to the general state. In a disease of such long course, it is impossible to prevent accidents by putting the bowels in splints, even if it were desirable to do so. More or less peristalsis must go on, and waste matter must pass over the ulcerated surfaces; and how deep or extensive the ulcerated surface may be in any particular

case, no symptom or group of symptoms enable us to measure. Hence, it seems rational, quite apart from the fever, to withhold from the diet any articles the residue of which is liable to irritate either the mucous membrane in general or the ulcerated portion in particular. This would seem a fair explanation for the popularity of milk as a diet for typhoid, containing as it does a large proportion of water and every principle necessary to nutrition so combined as to make relatively small demands on the digestion of most persons, and leaving a residue which, though notoriously large, is not mechanically irritating. The objection to milk is that it is repugnant to a few persons, and becomes either repugnant or monotonous to a considerable number sooner or later. It is not necessary here to specify the many expedients which may and often must be resorted to to overcome this objection, and in some cases to render it digestible whether palatable or not. Milk is likely to maintain a very important, perhaps leading place in the diet of typhoid as well as of other diseases and conditions. For a number of years I adhered as strictly as possible to an exclusively milk diet in typhoid fever until at least a week had elapsed from the date of the first normal evening temperature. I closed my ears to the clamours of adults, and my eyes and heart to the tears of children, as I now believe unnecessarily. Thirdly, it was only comparatively recently the general opinion of the profession that relapse is or may be due to errors in diet. I well remember the time when a fresh access of fever led my teachers and me to carefully inquire into the kindness of officious friends. It was often proved that forbidden fruit actually or metaphorically had been brought in by a visitor, and this was an entirely satisfactory explanation. When proof could not be had the fact of relapse was strong presumptive evidence of sin. We know better now, and while we recognise that errors in diet may produce fever, as may fatigue or excitement in convalescence from any severe disease, we do not believe that they can start up a fresh invasion of bacilli from within. One of the things which set me thinking on this question of the diet in typhoid was the favourable course run by several acute febrile cases for whom I ordered a full diet because they were weak; believing at the time of so doing that typhoid could be excluded, but being forced to the conclusion later that only typhoid fever could explain the whole course of the disease. These patients did perfectly well, were happier, and convalesced more rapidly than my recognised typhoid cases fed exclusively on milk. For five years now, I have been enlarging the diet of my typhoid cases and have seen no reason to regret this course, but on the contrary found cause for satisfaction.

During the twelve years, 1886 to 1897 (both inclusive) 380 cases of typhoid fever have come under my personal care in the

Massachusetts General Hospital. From 1886 to 1893, 233 cases were treated under a milk diet with a mortality of 10 per cent. From 1892 to 1897, 147 cases have been treated under a much more extended diet with a mortality of 8·1 per cent. I know well the liability to reach false conclusions in reasoning from too small figures in a disease like typhoid fever. And it is also true that water has been used more efficiently of late than in former years. But I can see nothing in my figures to contravene my observation that an enlarged diet has not been injurious. I would not be understood as advocating an indiscriminate diet. My plea is simply for treating the patient rather than the disease; for feeding him with reference to his digestive power rather than solely or mainly with reference to his fever; for the view that the danger of accidents from the local intestinal ulceration is not increased by allowing him to partake of articles which leave no irritating residue, and which cautious trial shows are digested without disturbance or discomfort. At one end of the scale are the cases with such irritability or weakness of the stomach as to lead to the unfortunate term gastric fever, or those with pronounced diarrhœa and undigested food in the stools; at the other end are those more numerous cases with clean tongue and a desire for food. Between the two is every gradation. The life of the former may depend on the skill and ingenuity of the doctor, assisted by the intelligent devotion of the nurse. The comfort and the duration of disability of all others may be materially modified for good by careful study and wise individualisation of our cases. A long list of permissible articles from which selection can be made for different cases, and for the same case at different times under varying circumstances can be given. That which I append makes no claim to completeness, but is meant merely to be suggestive and illustrative.

Typhoid diet.—(1) Milk hot or cold, with or without salt, diluted with lime water, soda water, apollinaris, vichy; peptogenic and peptonised milk; cream and water (*i.e.*, less albumin), milk with white of egg, slip, buttermilk, koumyss, matzoon, milk whey, milk with tea, coffee, cocoa. (2) Soups: Beef, veal, chicken, tomato, potato, oyster, mutton, pea, bean, squash; carefully strained and thickened with rice (powdered), arrowroot, flour, milk or cream, egg, barley. (3) Horlick's food, Mellins' food, malted milk, carnipeptone, bovinine, somatose. (4) Beef juice. (5) Gruels: Strained cornmeal, crackers, flour, barley-water, toast-water, albumin, water with lemon-juice. (6) Ice-cream. (7) Eggs, soft boiled or raw, egg-nog. (8) Finely minced lean meat, scraped beef; the soft part of raw oysters; soft crackers with milk or broth; soft puddings without raisins; soft toast without crust; blanc mange, wine jelly, apple sauce and macaroni.—*Journal of the American Medical Association, July* 10, 1897.

3.—ON THE OCCURRENCE OF RIGOR AND COLLAPSE IN TYPHOID FEVER.

By W. P. Herringham, M.D.

[This paper includes a personal observation by the author and ten cases collected from the records of St. Bartholomew's Hospital. The details of the cases have been omitted. Rigors in the course of typhoid fever are sometimes very puzzling, and not much is to be found in text-books about them. See also *Retrospect*, vol. cxiii., 1896, p. 135.—E.F.T.]

(*Personal observation*) Typhoid fever—high temperature at first—slow and irregular lysis—rigors during lysis—recovery.

Case 1.—Severe typhoid—rigor during acme—rigor during lysis with abdominal pain—death—post-mortem, suppurating mesenteric glands.

Case 2.—Severe typhoid—rigors at onset of lysis, perhaps due to application of ice.

Case 3.—Severe typhoid—collapse during acme—rigor during lysis while passing stool.

Case 4.—Severe typhoid—slight rigors during acme, due to anti-pyretics—severe rigors during lysis, probably due to thrombosis—boils—insanity.

Case 5.—Mild typhoid—rigors during lysis—cause unknown.

Case 6.—Moderate typhoid—rigor during lysis—cause unknown.

Case 7.—Moderate typhoid—relapse, followed by a long period of rigors—pelvic abscess.

Case 8.—Mild typhoid—rigor in post-febrile period, probably due to enema.

Case 9.—Severe typhoid—in post-febrile period one rigor, and several sudden attacks of pyrexia.

Case 10.—Severe typhoid—recurrent collapse during lysis—rigors in post-febrile period—cause unknown.

From these cases it is plain that rigors may occur during the acme (Case 1), at the beginning of lysis (Case 2), during lysis (Cases 3, 4, 5, 6), in the lysis of a relapse (Case 7), or in the post-febrile period (Cases 8, 9, 10). They occur at all ages and in both sexes. Cases 4 and 6 probably, and Case 5 certainly, were alcoholic men. None of the women lay under this suspicion. Ague is not mentioned in any one of them, and is so uncommon in England, and especially in London, that it may be disregarded. There are some cases in which the exciting cause may be suggested with some probability. In Case 1 the first shivering occurred on admission, and may have been due to the undressing and slight washing which such patients receive. For in Case 4 the reduction of temperature, whether by phenacetin or sponging, was accompanied by shivering, much as might happen in health, and in Case 2 it seems as if the same cause

were at work. In others some abdominal stimulus seems to start a rigor. Thus in Case 2 it came on while the patient was at stool. In Case 1 it was closely preceded by abdominal pain, and in Case 8 an enema, given in the post-febrile period, was followed by a rise of temperature, though the rigor did not occur till thirty hours later. In Case 4 severe rigors accompanied the onset of thrombosis during lysis, and were repeated many times afterwards. The first chills are thus sufficiently explained, but no cause could be discovered for the latter. In Cases 5 and 6 rigors occurred during a primary lysis. No anti-pyretics had been given, and no cause could be discovered for the rigors. In Case 7 the rigors occurred during the second lysis, the lysis of the relapse. Again, no cause could be discovered at the time when the rigors began. It was not till nearly a fortnight later that the small pelvic abscess was palpable. It is possible that thrombosis in vessels which did not cause outward œdema may have caused these rigors, or that in the last case the suppuration may have begun when the rigors first set in. But there is, I think, little doubt that similar causes would not produce symptoms of such severity save under peculiar conditions, and the facts merit close examination.

Every one knows that often in typhoid fever lysis begins by a fall in the morning temperature alone, and that, generally speaking, the extreme daily temperatures are more widely apart in lysis than when the fever is at height. In the chart of my own case, the close character of the chart during acme contrasts well with its open appearance during lysis. In some cases this oscillation is very great, and extends through three or four degrees Fahrenheit, though the "rhythm" of morning fall and evening rise is preserved. In others, as in Case 5, the rhythm is reversed, and the morning temperature is higher than that of evening; and lastly, there are many in which there is great fluctuation, and the rhythm is almost or entirely lost. In both health and disease the temperature is believed to be ruled by thermal centres in the brain, and such irregularity as this to which I have referred connotes some irregular action of these centres. They are not the only parts of the brain affected in typhoid; the tremor and delirium which are common in the acme, and may last long after that is past, the insanity which is by no means uncommon in the later periods, and of which a good instance is given in Case 4, are due to paralysis of the motor and of the mental centres. A similar affection of the thermal centres appears to me the best explanation of this irregularity of temperature. It is believed that in fever the thermolytic centre is paralysed by some poison, we know not what, due to the disease. When this is at its height, and the poison in full strength, the pyrexia is comparatively continuous. As the poison, undergoing the process common to all fevers, loses

its strength, or is perhaps counteracted by some product of our own tissues, its effect becomes at first irregularly, and then steadily weaker. I am tempted to draw an analogy, which may seem fanciful, between the effect of typhoid upon the thermal centres, and the effect upon the motor centres of epilepsy. The tonic stage of the latter corresponds to the continuous high fever of the acme, the oscillations of the lysis to the clonic stage of epilepsy, when the stimulus that has produced the fit is passing off, and the subnormal temperature frequently seen after lysis to the weakness left after the epileptic attack. It is true that if fever be due to the inhibition of the thermolytic centre, the positions in the two cases are reversed, that in fever the thermolytic centre must be held to be at first paralysed, and at last over-active, instead of the reverse as in epilepsy. But our knowledge of the mechanism of either state is too imperfect for any exact conclusion, and all I wish is to suggest, that after the cessation of a morbid stimulus it is the natural tendency of nervous centres to act with great irregularity before they recover their former state of health.

Lastly, there is another class in which the rigors and vagaries of temperature occur as isolated phenomena in the post-febrile state. Cases 8, 9, and 10 are examples of this. In the first of these the symptoms have been already ascribed to the enema, and the fact that on the first night pyrexia alone resulted, while on the next a rigor took place also, is evidence that no real distinction can be drawn between the two rises of temperature. For the other two cases no cause could be discovered. This only means that typhoid patients have the unstable thermotaxia of children, and that slight causes, which do not affect the self-controlled adult brain of health, are sufficient to upset it when exhausted by typhoid. It may be that thrombosis of some small internal vein may sometimes be such a cause.

Let me now pass to the second phenomenon which heads this paper—collapse. By it I mean a rapid, shallow respiration, a rapid and very small pulse, pallor, and lividity. Often these symptoms occur, as in Case 3 and Case 10, with sudden fall of temperature, but often they accompany a rigor, and in some cases, *e.g.*, Case 7, they occur both with a rigor and alone. It is for these reasons that I consider them akin, and have placed them together on my title. I believe them, like rigors, to originate in the highest nervous centres, and to be similar in nature. They are not so frequent, at least not so frequently noted, as the others, and I have not sufficient material to classify them in detail. Having shown how often and when rigors and collapse occur, and having suggested a theory of their causation, I will add a few words as to their significance in prognosis and as to their treatment. Briefly, I should say that they cannot be foreseen, that although they appear most serious, they

do not affect the prognosis, and that no treatment is of any avail. We have already seen that there are no predisposing causes common to these ten patients. Nor is there any general resemblance in their fever likely to enable the occurrence of rigors to be foretold. Both severe and mild cases have them. The pulse is no criterion. In Case 1 the pulse was very rapid; in Case 10 it was 140—120; in Case 4 it was about 120—110; in Case 6 it was rarely so high as 110; and in my own case it was rarely above 100 during the acme. Secondly, that they do not affect the prognosis is shown by the fact that all but Case 1 recovered, and that this patient was from the first evidently in great danger. Thirdly, no treatment is of any avail. These attacks, being in their nature transitory, pass off when let alone, as well as when drugs are given. In Case 3 quinine was given in eight-grain doses; in Case 7 opium was given constantly for many days, both without effect. In my own case quinine was given before the rigor came on, but did not stop it, while anti-pyretics, such as antipyrine, antifebrin, phenacetin, and the like, have been directly accused by Osler of causing the rigors. When once the rigor has begun, one knows with certainty that its duration is limited, and a careful examination of these records entirely forbids me to believe that rigors in which quinine, opium, or other anti-pyretic has been given, differ in the least from others in which they have not. For instance, in my own case, on September 19, two rigors occurred early in the morning and one in the evening. For the former nothing was given, in the last five grains of quinine. All three lasted exactly the same time, viz., three-quarters of an hour. For the collapse occurring at the same time, or with low temperature, stimulants and warmth are the natural treatment. Brandy by the mouth, and a hypodermic injection of strychnia, are usually, and reasonably, given. One may, however, be permitted to hope that, should accident prevent the taking of such precautions, the patient would yet recover within no very long time from his alarming state.—*St. Bartholomew's Hospital Report*, xxxii., 1897.

4.—RELAPSE IN SCARLET FEVER.

By E. MacDowel Cosgrave, M.D., F.R.C.P. I.,

Physician to Cork Street Fever Hospital, Dublin, &c.

[The following is taken from Dr. Cosgrave's paper:]

During the course of scarlatina various rashes may appear in addition to the specific one; sometimes these are "accidental," being caused by local applications or digestive troubles; sometimes they denote the presence of a second febrile process, and in this way the rashes of measles, Rötheln, chicken-pox, enteric

fever, &c., may be met. Sometimes, however, the second rash is a punctiform scarlatinal rash, and the severity of the course of the febrile disturbance, the accompanying symptoms and the resulting desquamation, show that the second rash is due to a true relapse. A true relapse must, however, be distinguished not only from accidental rashes, but from true second attacks. The best definition of a relapse is Körner's:—"A true relapse in scarlet fever is quite analogous to the relapse in typhoid; the first febrile process is completely gone, usually desquamation has appeared, sometimes even terminated, when there sets in a renewed manifestation of the disease. There appears for the second time a characteristic scarlatinal exanthem, all the symptoms of the illness begin anew, sometimes worse than in the first illness; often the new exanthem completes the former."

For the careful notes of the two following cases I am indebted to the kindness of Dr. Ernest A. Bourke, who at the time the cases were under treatment was Assistant-Resident Medical Officer at Cork Street Hospital.

Case 1.—P. B., a girl of 9 years of age, was admitted into Cork Street Hospital under my care, on the second day of illness, on November 12, 1896. She had a very extensive dark-coloured rash, almost purpuric in appearance; well-marked *tache scarlatinale*; the tongue was coated and the papillæ were prominent; the tonsils were inflamed, swollen, almost plum-coloured, and bore large patches of exudation; the submaxillary glands were swollen and tender; there was sleeplessness and delirium; the temperature on the evening of admission was 103°, the pulse 132. It was evidently a severe case of scarlatina anginosa. The illness of other members of the family confirmed the diagnosis; as a sister, admitted on the same day, died, on the fifth day of illness, of scarlatina maligna, and four other brothers and sisters were admitted during the same month, all suffering from severe scarlatina. The figures of the case need be but briefly noted; the temperature kept up to 103° until the fifth day, from that it fell until on the ninth day it was normal. On the sixteenth day of illness the patient was allowed up. There was no albuminuria; desquamation was well marked, the cuticle separating in large flakes. On December 7—the twenty-eighth day of illness, and twenty-sixth day after admission in to hospital—when desquamation was finished on the trunk and upper extremities, but was still occurring in the legs and feet—the patient had an attack of vomiting; this was accompanied by headache, and pains in the limbs; towards evening a red rash appeared on the trunk and limbs, and the temperature rose to 103·4°, the pulse being 108. December 8. (Next morning).—The temperature had risen to 105° and the pulse to 132; the skin was hot and dry, there was a scarlet punctiform rash all over the chest, back, and limbs; *tache scarlatinale* was well marked; the tongue was coated, its papillæ being prominent; the pharynx was red, the tonsils were inflamed and swollen. December 9.—The skin was still hot and dry; the rash on the body was still bright-coloured and punctated; the *tache scarlatinale* was especially well marked on the back; the skin around the mouth and at the sides of the nose was still free from rash; there were well-marked petechial lines at the bend of the elbows, and in the popliteal spaces; the kidneys were acting freely and the urine contained a little albumen, which persisted for two days, but there was neither blood nor tube-casts. December 10—The rash was fading; the coating

was clearing off the tongue and the enlarged papillæ were prominent; the tonsils were still swollen. December 11—The temperature fell to normal; and four days afterwards, on the eighth day of the relapse, secondary desquamation commenced on the arms, the sides of the neck and the axillæ. A week later there was well-marked flaky desquamation on the body, on the arms, and about the axillæ; and a few days later there was slight secondary desquamation of the hands. The patient was discharged on January 6, 1897.

Case 2.—J. D., a girl of 9 years of age, was on November 27, 1896, admitted into Cork Street Hospital under my care, on the fifth day of illness. There was a bright-coloured rash; the tongue was stripped, the papillæ prominent; the tonsils were inflamed and swollen. On the same day a younger sister was admitted, both children were suffering from mild but undoubted scarlatina. On December 2, desquamation commenced, and the case went on favourably until the morning of December 15—eighteen days after admittance, and the twenty-fourth day of illness—when the child complained of headache and sore throat. That evening the temperature rose to 105°, the pulse being 124: there was now a bright red eruption of very minute points over the trunk and arms; the forehead and cheeks were flushed, the parts round the mouth and nose retaining their normal colour; the tongue was coated and the papillæ were prominent; the tonsils were swollen and inflamed; the hard palate, the fauces and pharynx were injected. December 16.—The temperature both morning and evening was 102°, the rash had faded on the trunk, but was well out on the thighs and legs; there were red petechial lines at the bend of the elbows; the papillæ of the tongue were still more prominent. From this on the case gradually improved, the temperature becoming normal on December 18—the fourth day of the second attack. The child was desquamating in parts when the second rash appeared, and after the second attack the desquamation in those parts was greatly increased. Desquamation was repeated in parts where the former desquamation had ceased. On January 12, 1897, the fifty-first day from the first attack, and thirty-fourth from the second attack, the cuticle was separating in flakes from the feet.

In neither of these cases was there any doubt as to the initial disease, and in both cases the diagnosis of relapse was not founded upon one or a few symptoms, but the severe invasion, the rash, the characteristic tongue and fauces, the high temperature, and secondary peeling, all were present, so I think I am justified in recording them as cases of true relapse.—*Dublin Journal of Medical Science, September*, 1897.

5.—BACTERIOLOGICAL DIFFERENTIATION, WITH REPORT OF THE BACTERIOLOGICAL ANALYSES OF 250 CASES OF THROAT DISEASE.

By St. George Reid, M.R.C.S. Eng.

[We quote from this paper, as, in addition to the analysis of the 250 cases, it gives some simple bacteriological details:]

Fractional separation in the fluid media was tried, but no real success was assured until it was found by Koch that by adding

gelatine to the meat solution a solid medium could be obtained, the colonies growing on it could be isolated and removed to other media, until perfectly pure cultures were obtained. Then, and only then, did it become possible to study the specific character of the organisms and the conditions under which they grow. A distinct advance was made by the substitution of agar-agar for gelatine, whereby it was possible to cultivate such bacteria as flourish at a higher temperature than the melting-point of gelatine, on a solid medium. More recently still, Koch added a medium of blood serum for the growth of certain organisms. There are also such media as potatoes, white of egg, bread crumbs, the use of all of which of course depends on their being rendered perfectly sterile; but I shall confine myself to the gelatinised meat peptone medium, the agar meat jelly, and the coagulated blood serum, these media being sufficient for the purpose of bacteriological differentiation. Gelatine tubes are prepared in two forms, either straight—the gelatine being allowed to solidify at the bottom of the tube—or sloping—the tube being tilted and the gelatine solidifying in a sloping manner, offering a convenient surface for inoculation. Agar-agar and blood serum tubes are usually prepared in the sloping form.

Having thus obtained a nutrient solid medium, which has been thoroughly sterilised, contained in a test tube also sterile, and which has been maintained in a sterile condition by the cotton wool plug, we proceed to inoculate it with the bacteria we wish to study. For this purpose it is best to use a platinum wire, which is first rendered sterile by being placed in the flame, and then allowed to cool; singe the top of the cotton wool plug, quickly withdraw it, and, holding the tube mouth downwards to prevent contamination from the air, rapidly inoculate the medium, being careful to sterilise the plug by passing through the flame before replacing in the tube. Since, as I have stated, some organisms will only grow at a temperature above the melting point of gelatine, we inoculate another tube of agar or blood serum, which is put in the incubating oven, and maintained at a temperature of 37° C. Now suppose the organism has grown, we proceed to identify it. First we notice whether there has been any growth on gelatine at ordinary temperature; if there has been none, it narrows the inquiry considerably, for it removes the organism into a group by itself. If there has been any growth on gelatine, we notice the rapidity of the growth, staphylococcus, for instance, growing much more quickly than the streptococcus; we note whether the gelatine is liquefied or not, as some organisms have the power of breaking down this medium more or less rapidly; while others not having this property, we are enabled to separate the gelatine-growing bacteria into two great classes. The next step in our diagnosis is to note whether the organism is chromogenic or not, some

being markedly chromogenic, *e.g.*, the colonies of bacillus prodigiosus having a deep red colour, staphylococcus pyogenes aureus, orange; staphyl. pyogenes citreus, lemon; and bacillus violaceus, violet, &c. Others, while remaining white themselves, have the power of colouring the medium on which they grow, bacillus pyocyaneous being a good example of this class. In some cases, the colonies have a fluorescent appearance, and some have the power of liquefying blood serum, whilst the growth of some organisms is accompanied by an extremely disagreeable odour.

We can now proceed to a microscopical examination. Place a drop of distilled water on a perfectly clean cover glass, transfer a very small portion of the culture, on the point of a sterilised needle to it, being careful to avoid all contamination by using all the precaution as to sterilising the cotton wool plug, &c. Spread the drop evenly over the slip, and allow it to evaporate, thus leaving a hardly visible whitish film over the glass. When quite dry, fix the preparation by passing it three times through the Bunsen flame. It is now quite ready for staining, and as a general stain few stains are better than Lœffler's methylene blue; allow the stain to remain on a few moments, wash well in water, dry, and mount in Canada balsam, and examine under the microscope. The first point to settle is, whether the organism is a coccus or a bacillus; and, having done so, let us for a moment glance back and see how far we have got towards the differentiation. Say, *e.g.*, it is a micrococcus, growing on gelatine, which it liquefies, or does not liquefy; the colonies are arranged as raised drops, thick or thin films, circular patches, wrinkled scales, &c. The organism is chromogenic or non-chromogenic, its growth is or is not accompanied by a foul odour; it is or is not fluorescent; it does or does not colour the medium on which it grows. The next aid in the diagnosis is the arrangement of the organism. Supposing it to be a micrococcus, some micrococci are arranged in masses, like micrococcus pyogenes aureus, whose orange growth we have already referred to. Under the microscope you may see grape-like clusters of cells scattered all over the field; in others the cells are arranged in chains, called streptococci: or the cocci may be in pairs (diplococci). Lastly, we have the cocci in packets (sarcinæ), as in the instance of micrococcus tetragenus. You will see that all these characters have divided and sub-divided our cocci, until at last they are in fairly manageable groups, and we look if possible to find some final aid in the diagnosis. In this we are assisted to some extent now by the peculiarities exhibited by some organisms in their manner of staining. Gram's method is a most important aid of this kind; its utility depends on the fact that certain important pathogenic organisms when stained in aniline water gentian violet, and afterwards immersed in an iodine solution, will not

give up their colour when washed in alcohol, whereas the colour is discharged by the tissues, and by most of the other organisms. Another method is that known as Lœffler's, for showing the diphtheria bacillus. This bacillus is characterised by the fact that it stains irregularly, but stains strongly in Lœffler's solution of methylene blue, and retains the blue stain even when washed in a very dilute solution of glacial acetic acid. Another peculiarity in staining is one associated with that very important organism, the tubercle bacillus. This organism, whilst staining by Gram, has also this marked characteristic, *i.e.*, when stained in a warm solution of carbol-fuchsin it refuses to give up the colour, even when washed in a 15 per cent. solution of sulphuric acid. An organism which resembles the tubercle bacillus exactly in its manner of staining, size, &c., is the bacillus of leprosy, the difference to be noted being its remarkable arrangement, the organisms being collected in masses in the nodules of the skin. Some organisms have some peculiarity in their arrangement which distinguishes them from others. Others vary in their size; others are capsuled, or have some peculiarity in their sporing, bac. putrificus coli, for instance, one of Bienstock saprogenic organisms, carrying a large spore at one end, giving it the appearance of a drumstick.

I have now referred to some of the aids in the diagnosis of organisms, and I have only to add that in the case of bacilli the mobility should be ascertained at an early stage, by means of hanging drop cultures, as it divides the organisms into well-marked groups. Now, to deal with the separation of organisms. Of course, when we take an inoculation direct from the throat, we take with the sweeping an enormous number of bacteria which it would be hopeless to classify unless we sort them out. This may be done in two ways, either by immediate plate cultures or by cultivating them first and then making plate or roll cultures. A plate culture is made by inoculating a gelatine tube, melting the gelatine, mixing it thoroughly, and then pouring it into a sterilised petri dish, the gelatine solidifying in an even layer over the dish; the plate is then placed in a damp chamber. The organisms are by this means widely separated, and grow as distinct colonies, from which portions may be removed for examination or for fresh inoculation if necessary. In a roll culture the gelatine, instead of being poured into a petri dish, is, by rolling the tube, made to solidify around it, and so the necessary separation is obtained. Of course, the fact that some of the organisms will only grow on blood serum is an additional aid in their segregation.

Now to refer to the work done in the laboratory up to the present date. In all we have the bacteriological notes of about 250 cases, of various diseases of the throat, and in view of the recognised importance at the present day of the relation between

bacteria and disease, especially as regards diseases of the throat, it cannot be without interest to glance at the tables; in looking at the results obtained, whilst it must be admitted that we can lay down no rigid line, as to the relation of one form of organism and a special affection, yet there is a certain frequency between some of the organisms and certain forms, or, perhaps, more properly speaking, I should say phases, of disease that would encourage us to hope that by perseverance and greater accuracy we may obtain some definite result. For instance, in slight inflammatory affections, such as subacute lacunar tonsillitis, the staphylococcus pyogenes albus is almost always the pathogenic organism present (appearing in 55 out of the 251 cases), giving place to the staphylococcus pyogenes aureus in more acute cases (47), an admixture with the streptococcus pyogenes brevis in either case indicating greater severity of the symptoms (71). Again, in cases of acute inflammation of the throat without breach of surface, with possibly a tonsillar or peri-tonsillar abscess, cultures taken from the surface or from pus drawn from the interior of the abscess will almost always show the streptococcus pyogenes brevis; but should the abscess have burst, leaving a considerable unhealthy surface, or the case be one of ulceration, where sloughing surfaces are exposed to contamination by the air and food, the streptococcus pyogenes longus seems to take the place of the shorter variety (32). The cases from which these notes were taken, for which material I am indebted to the staff of the hospital, would, of course, represent principally sub-acute or acute varieties of disease, in which the symptoms caused sufficient inconvenience to induce the patient to miss his or her work in order to obtain relief. Considering the number and variety of organisms always present, even in the normal throat, it is not surprising that what Mr. Lennox Browne terms monoccal throats are exceptions. In one case of influenza pharyngitis, diplococcus pneumoniæ appeared to be the only organism present, and a severe case of acute faucitis without ulceration, gave a pure culture of micrococcus tetragenus; there were also a few others, but none of especial interest. (Among many other microbes the streptococcus was found in 103 cases, the staphylococcus aureus in 47, the staphylococcus albus in 55, the diplococcus pneumoniæ in 50, micrococcus tetragenus in 21, micrococcus albus liquefaciens in 39, B. termo in 26, B. diphtheriæ in 8, B. coli in 24, torula alba in 18, &c.)—*Medical Press and Circular, June* 16, 1897.

6.—CHRONIC ARTICULAR RHEUMATISM AND ITS TREATMENT.

By Professors Baümler and Ott.

At the Medical Congress, Dr. Baümler, Freiburg, introduced this discussion. He understood by chronic rheumatism cases in which repeated subacute attacks occurred where treatment had not been careful or sufficiently long-continued. The other form was somewhat different, and consisted of cases where an acute attack had not been sufficiently treated, and where the inflammation had left behind permanent changes in some joints. The diagnosis was rendered difficult, as a decided originating micro-organism had not been demonstrated. We had, therefore, to keep to the chief symptoms—the quickly-following inflammation, swelling of joints, generally with considerable peri-articular swelling, great painfulness, great tendency to endocarditis, the constant though slight fever, the tendency to sweating, and the generally effective, but in some cases only slight, action of salicin preparations. He had never observed enlargement of the spleen. As regarded the symptoms these were—paleness, emaciation, often, however, excess of fat, atrophy, thin, shining, tense skin, with longitudinal or transverse markings, redness, and extreme warmth of the palms of the hand, grating of joints on pressure movements from loss of cartilage in the joints, frequently immobility with both jaw action and passive attempts to move, gradual contraction of muscles and ligaments, sooner or later deeper disturbances of various functions as well as of the general condition. Definite changes of tissue metamorphosis had not been demonstrated. Occasional albuminuria and glycosuria were results of general nutritive disturbances. The same with regard to Basedow's disease or psychosis. Fever was not present except when fresh joints were attacked. The general condition as well as the function of the nervous system was generally unfavourably influenced by pronounced morphinism.

There were different opinions as regarded curability in the early stages. The greatest care should be taken at the very commencement, and the diet should be carefully regulated. The disease should be thoroughly differentiated from others presenting similar symptoms, such as gonorrhœal articular inflammation. In his opinion external influences could predispose to the disease, and also individual peculiarities, so that one was justified in speaking of a rheumatic diathesis. The preponderance of the disease in women was due to nervous influence. Hereditary disposition was judged variously. The favourite age with women was between the fortieth and fiftieth years. Childhood was not included. In youth it often took a more acute course.

Both the blood and the nervous system might have to do with the simultaneous and symmetrical attacking of several joints. It could not be doubted that a neurasthenic condition, induced by over-work, cares, distress, or mental shock, might predispose the body to this or that organic disease; and in the treatment of arthritis deformans, these predisposing factors should be considered. Joint diseases were also believed to be of reflex origin, especially as a result of disturbances in the genital apparatus of women. The repeated occurrence of bacteria in the fluid of the joints demanded further investigation in that respect. He did not doubt that occasionally gout contributed primarily or secondarily to the occurrence of arthritis. He resumed as follows:— The word rheumatism should be restricted to the ordinary acute form, and those diseases that were considered variants of it. There was a special form, mostly polyarticular, and therefore resembling articular rheumatism characterised by a chronic course, without disposition to cardiac complication, not influenced by salicylin, leading early to deformity and contraction of joints. The disease was to be designated as arthritis, a polyarthritis deformans. The cause of the disease was not certainly known. All factors that led to the disease were predisposing. The female sex showed a special disposition. There appeared to be a certain connection between the disease and various processes of the sexual apparatus. It had no special preference for the poorer classes. No special genetic connection with disorders of the nervous system could be shown. It was not improbable, and recent bacteriological investigation gave support to the supposition that it was an infective disease. Several causes and even various infection occurring once or successively might have to be considered.

Herr Ott, Prague, treated the subject from the therapeutical side. The disease must be treated from the first hygienically and medicinally. The incipient commencements of the disease must be watched. Suitable dwellings, occupation, and woollen clothing were required, and the body must be made more invulnerable with rubbings and douches. Catarrhal changes of the mucous membranes must be overcome quickly and mental disturbances avoided. The disease must be treated etiologically. At present there were three different etiological views as to the disease:—(1) lessened alkalescence of the blood, (2) changes in the nervous system, (3) infection by micro-organisms. The free exhibition of alkalies corresponded to the first view. Charcot gave large doses of sodii bicarb. From the second point of view the disease required nerve tonics, baths, and mydriatic treatment. The third view justified the use of general and local anti-infective material, quinine, and salicylic preparation. Iodide 2 per cent., carbol salicylic injection into the diseased joints. Creosote and guaiacol were much praised. Methyl

salicylate acted very favourably on the pains. In the chronic stage painting with iodine to slight dermatitis was useful. The active principle in baths was the heat, but they must be continued sufficiently long. A high percentage of salts stimulated, and this favoured the resorption of exudation. Peat and mud baths gave excellent results, as they could be used hotter than the others. Sand baths were also excellent. English physicians ascribed surprising results to an apparatus in which the air was kept at a temperature of 300 deg. F. Massage was very important. Resistance movements were also useful for keeping up the tone of muscles. Electricity gave very good results. Internal treatment was, upon the whole, far behind the external. Quinine, cod-liver oil, ichthyol, Fowler's solution, were to be recommended, but according to Charcot, the latter might be hurtful in certain cases. Mineral waters could be used as curative beverages. Lastly, he would mention surgical treatment. Immobilisation, puncture of the joint, massage, arthrectomy, forced stretching under an anæsthetic. Ankyloses in favourable position were to be let alone. Others must be redressed.—*Medical Press and Circular, July* 28, 1897.

7.—A CASE OF SERO-THERAPY.

By Henry M. O'Hara, F.R.C.S. I.,
Senior Hon. Surgeon, Alfred Hospital, Melbourne.

[This paper is included here on account of (1) the method of obtaining the serum, and (2) the speedy recovery which followed the injection of the serum. It is not proved that either the patient himself or the donor of the serum suffered from a streptococcus infection.—E.F.T.]

The treatment of disease by sero-therapy being such a recent discovery, the literature on the subject is necessarily scanty; I feel sure, therefore, that you will be interested in the notes of the following case. I shall give only a slight sketch of the illness up to the time of my connection with the case, from data kindly furnished me by Dr. Morrison, who was in attendance all through. On or about November 1, 1896, Dr. Morrison first saw the child (Master N. H., aged 9 years). He had been complaining of intense earache on the right side. His temperature was above normal; there were no other very marked symptoms. He was prescribed for, but, the pain continuing, an aural specialist was called in, with the result that on November 10 the right mastoid was opened and curetted, and a little caseous-looking material removed, but no sign of active disease was discovered. As a result of the anæsthetic, the temperature, as

is generally the case, fell to normal for a few hours, but rose again on the following day to 102·6°. On November 12 the left ear began to pain, and the temperature rose to 104.8°. On November 13 the patient had a rigor, and the temperature went up to 150°. The left mastoid was therefore operated upon, but the temperature still rose, and registered 105·4° on November 14. Another surgical opinion having been called, it was decided to again curette the right mastoid; this was done, and the following day, November 15, the temperature reached 106·8°, and he had another rigor. The temperature for the two succeeding days ranged from 100° to 107°, accompanied by rigors at intervals varying from 4 to 12 hours. With the temperature at 107·5°, pulse 140, and respirations 40, it was decided to trephine the skull and explore. This was done on November 18, but no abscess discovered. The temperature fell for a few hours, and rose the following morning to 105·8°. In spite of all the medical skill and careful nursing, the condition of septicæmia continued. On November 24 I first saw the patient in consultation with Dr. Morrison. His temperature was 104·4°, pulse 124, respirations 38. The glands in the axillæ, groins, and neck were enlarged and hardened, and a distinct thrombus could be felt in the right femoral vein, intensely painful on pressure. There was also noticeable that odour so marked in cases of advanced sepsis. and the appearance of the skin was of a slightly yellow or clayey colour. The abdomen was markedly tympanitic. All other treatment having failed, I suggested the advisability of injecting the anti-streptococcus serum, and it was decided that it should be done. Dr. Morrison had previously advised this line of treatment, but for some reason it was not carried out. There was, however, no serum to be had in Melbourne, so, failing that remedy, I adopted the following plan. At the Alfred Hospital there was a patient under my care convalescing from an acute attack of septicæmia. His temperature had been normal for eight (8) days, so I determined to obtain from him enough serum to inject into our patient, N. H. Under strict asepsis, I opened the median cephalic vein, and extracted six ounces of blood direct into a previously sterilised glass-stoppered bottle. On the clot forming, I obtained four (4) drachms of serum and injected this into the submammary areolar tissue of the patient. For twelve hours there was no marked difference in his condition; he was quiet and inclined to sleep. At the 17th hour his temperature was 104°, and he became rather restless; at the 24th hour the temperature had fallen to 99°, pulse 96, respirations 22. During the twelve succeeding days the temperature ranged from 98·6° to 100°, and he was making rapid progress towards recovery; but on the 13th day after the injection his temperature went up to 102°, and varied from normal to 102° on the two succeeding days. I therefore decided to give another

injection. This was done on Dec. 10, the same method having been adopted as on the former occasion. There was a slight reaction on Dec.11, and on Dec. 13 the temperature fell to normal, and remained so during convalescence, which was complete.

For what length of time the blood of a convalescent from septicæmia retains an excess of antitoxin has not yet been decided. From experiments made by Abel, it would seem that the serum of patients convalescing from diphtheria possesses a protective power against diphtheria infection and diphtheria toxin in the guinea-pig, but that this protective action does not develop until the sixth day of convalescence, and lasts for some months. The serum in my case was extracted on the 8th and 22nd days of convalescence, and, from the way it acted, I think there is no doubt that the blood contained an excess of antitoxin sufficient to help our patient to successfully defeat the onslaught of the toxins he had been battling against for so long, just at a time when they seemed to have victory in their grasp.—*Australasian Medical Gazette*, *August* 20, 1897.

8.—THE ANTIVENOMOUS AND ANTITOXIC PROPERTIES OF THE BILE OF SERPENTS AND OTHER ANIMALS.

By Thomas R. Fraser, M.D., LL.D., F.R.S.,

Professor of Materia Medica and of Clinical Medicine in the University of Edinburgh.

[The following excerpt from Professor Fraser's paper is included here on account of the close relation between the subject dealt with and bacteriological treatment. The paper also possesses considerable physiological interest. The details of the experiments have been mostly omitted.]

In a paper communicated to the Royal Society of Edinburgh, I stated that when introduced into the stomach of an animal serpents' venom produces no obvious injury, even when the quantity is so large as to be sufficient to kill 1,000 animals of the same species and weight if injected under the skin. The failure of so highly toxic a substance to produce poisoning when it is administered by the stomach might be due to chemical changes produced upon it by the secretions of the stomach and intestines, or to non-absorbability into the blood from the stomach and intestines. It is already known that the toxicity of venom is not materially reduced by gastric digestion. Although at first sight incompatible with the innocuousness of stomach administration, this fact is not in reality a contradiction of it, for the absorbing power of the stomach for many organic substances, even for strychnine, has been shown to be extremely slight, and their

entrance into the circulation appears to occur not in the stomach but in the intestines. As serpents' venom introduced into the stomach is not rendered innocuous by the stomach secretions, while, notwithstanding, it fails to cause poisoning, it may be assumed that the stomach walls are incapable of absorbing it also. If, like other poisons, it can be absorbed from the intestines, the explanation of the failure to produce toxic symptoms when it is administered by the stomach might depend upon a chemical or physiological destruction of its toxic properties by some substance or substances which it encounters soon after entering the intestinal canal, and most probably, therefore, by the bile or the pancreatic secretion. To explain the innocuousness of stomach administration fully would accordingly require that the effects on venom of the biliary and other intestinal secretions should be investigated, and also the absorbability of venom through the intestinal walls. As a contribution to the settlement of the question I have made a number of experiments with the biliary secretion, and whatever may be the influence of the other secretions or of intestinal absorption, that of the bile has been found to be so decided as to be in itself sufficient to account for the innocuousness of stomach administration.

The experiments show that the bile of venomous serpents is able, when mixed with the venom of serpents, to prevent lethal doses of the latter from producing death; and that the bile is indeed so powerful an agent in doing this that a quantity actually smaller than the quantity of venom may be sufficient for the purpose. It need scarcely be added that the doses of bile thus shown to be sufficient represent only minute portions of the bile stored in the gall bladder of a serpent; and that a serpent, therefore, has at its disposal enough of bile to prevent injury from venom introduced into the stomach in quantities many times greater than the minimum lethal.

It appeared of interest to examine in a similar manner the bile of innocuous serpents and other animals. All serpents, innocuous as well as venomous, exhibit a resistance against the toxic action of venoms introduced subcutaneously or directly into the circulation which is not dependent on their being cold-blooded animals. Various facts, some of which are anatomical, tend to show that the innocuous, equally with the venomous serpents, possess poison glands and secrete venom. The former are innocuous only in the sense that they are not normally furnished with weapons of offence in the form of poison fangs. Most probably, therefore, the relative protection against the poisonous action of venom introduced into the circulation, which is common to serpents, is dependent upon an effect produced upon them by the venom which they all secrete, although in the case of the innocuous serpents only in relative small quantities. Experiments were

also made with the bile of the ox, as representing those animals which do not secrete venom, or possess any protection against venom introduced into the subcutaneous tissues or into the circulation, while at the same time they are protected against venom introduced into the stomach. The bile of the ox is able to antagonise the toxic action of serpents' venom, its antagonising power, however, being only about the one-seventieth of that of the strongest of the biles of venomous serpents which have been tested. It was shown by other experiments that the bile of the rabbit and of the guinea-pig also possesses this antivenomous property, and also in a degree, which, though feeble when compared with the bile of venomous serpents, is yet in itself considerable.

While, therefore, it may now be assumed that the bile of all animals is antivenomous, the difference observed between the potency of the bile of venomous serpents when contrasted with that of ordinary animals suggests that the antivenomous property must be dependent, at least in part, on some specific constituent or constituents present in different quantities in the bile of different animals. As this constituent is most largely present in the bile of venomous serpents, an endeavour was made to separate it from their bile. The antivenomous quality of puff adders' bile is not appreciably, if at all, dependent on the constituents soluble in alcohol, which include all the bile salts. When, on the other hand, the part of the alcohol precipitate soluble in water was tested in white rats against the minimum lethal dose of the same venom, while death occurred with 0·00008 g. per kilo., recovery occurred with 0·00003 g., 0·000025 g., 0·0002 g., and 0·00001 per kilo. The isolation of the antivenomous constituent made it possible to obtain further and different evidence of the power of bile to render venom inert. Although the bile in its original form possesses much power in antagonising venom when the two substances are mixed together *in vitro*, only 0·0003 g. of rattlesnake bile or 0·02 g. per kilo of ox's bile being required to render innocuous a minimum lethal dose of Indian cobra venom, it cannot be too distinctly stated—for the facts are also applicable to the antidotism between disease toxins and anti-toxins—that these data are apt to give an exaggerated conception of the curative value of the antidote when it is administered after the venom. Generally speaking, even when no more than the minimum lethal dose of venom is used, the quantity of the antidote required is from 1,600 to 2,000 times greater in the latter than in the former condition of administration. Although, while in the alimentary canal, bile is non-toxic, it is altogether different when it is injected under the skin or into a blood vessel. The bile salts and the bile pigments then act as poisons; and if a dose of bile were injected under the skin containing a sufficient quantity of the antivenomous

constituent to antagonise a minimum lethal dose of venom received half an hour previously, the constituents of the bile which are non-antidotal, but at the same time toxic, might be so great in amount as to produce death. The successful result of the attempt made to isolate its antidotal constituent has, however, rendered it possible to test the therapeutic value of this constituent when it is introduced into the blood of an animal which has already received a lethal dose of venom. The quantity at my disposal being only small, no more than one experiment could be made; and for the same reason it was made on a white rat. This experiment, taken in conjunction with the considerable number of *in vitro* experiments that have been made, not only supplies strong confirmation of the evidence given by those experiments that bile is able to render serpents' venom inert, but also suggests that from bile there may be produced an antidote for snake poisoning, which, in its antidotal value, is at least equal to the most powerful antivenene or antivenomous serum as yet obtained from the blood of immunised animals.

It is interesting to find that serpents' bile enters into the composition of the medicines most trusted in for the treatment of snakebite by the natives of Africa. Several specimens of these native medicines have been sent to me, which contain bile along with many other ingredients, such as serpents' heads, dried and powdered with the retained venom glands. As I have stated in a former communication, venom itself is used by stomach administration as an antidote, but many "snake doctors" consider that bile is more effective. It is employed by them not only by stomach administration, but also by rubbing it into the wound inflicted by the serpent. A "snake doctor," with a high local reputation, informed one of my correspondents that bile is the better antidote, but that, as venom can be more largely obtained, he uses it in the first instance, and reserves the bile for employment should the recovery of the patient appear doubtful. The interest associated with this action of bile is probably not restricted to its effect on venoms. Analogies in composition would suggest that the same action is exerted upon many of the toxins of disease, a suggestion which also receives support from the further analogy that many of these toxins, such as those of tetanus and diphtheria, while notoriously active when present in the blood, are inert when introduced into the stomach. Even when circulating in the blood, toxins, in common with other organic poisons, are probably being constantly eliminated into the alimentary canal, where they would at once lose their destructive power by contact with the bile, and thereby the total effective quantity of the toxin in the body would be reduced. There are also many poisonous substances generated in the intestinal canal, which in some circumstances produce intoxication. The production of this auto-intoxication may

partly be due to the failure of the liver to secrete a sufficient amount of healthy bile, and the therapeutic value of cholagogue substances, so long employed on empirical grounds, may thus also obtain a satisfactory explanation.

Bile is produced in large quantity by all animals, and it is present in the intestinal canal throughout its whole length, but beyond the fact that it is an important excretion, removing waste products from the body, its functions are not known to be of much value. So much is this the case that a recent writer has remarked, "the bile is a most elaborate secretion; it is poured into the intestine, and finds apparently little to do." To such recognised functions as the promotion of fat absorption and the laxative and indirect antiseptic actions, there may be added the additional function of rendering inert many organic poisons introduced into or generated in the alimentary canal.—*British Medical Journal, July* 17, 1897.

In a paper recently published in the *British Medical Journal* (July 17, 1897), in which it was shown that bile is able to prevent death from lethal doses of venom, the conviction was expressed that bile would be found also to possess antitoxic properties against the toxins of disease, such as of diphtheria, tetanus, &c. Experimental evidence in confirmation of this conviction has since been obtained. Thus there was given by subcutaneous injection to a rabbit 0·15 c.cm. per kilo. of diphtheria toxin mixed with 0·05 gramme per kilo. of the dried bile of normal rabbits, and to a second rabbit also 0·15 c.cm. per kilo. of diphtheria toxin, but mixed with 0·025 gramme per kilo. of rabbit's bile. No remarkable symptoms were produced except a temporary rise of temperature, and both animals are now in good health (a month after the injections had been made), and both have gained in weight. The toxin employed was kindly given to me by Dr. Noël Paton, Superintendent of the Research Laboratories of the Edinburgh Colleges. Portions of the same toxin were also injected without bile under the skin of three rabbits, one receiving 0·15 c.cm., the second 0·075 c.cm., and the third 0·05 c.cm. per kilo.; and all these rabbits have died, the first in from two or three days, the second in from eight to nine days, and the third in from ten to eleven days.

In the paper referred to it was shown that there is present in the bile of serpents a constituent or constituents, the process for whose separation was described, which possesses in a concentrated form the antidotal qualities of the bile itself. By a similar process there has now been separated from the bile of the ox a constituent which likewise possesses antivenomous qualities in a more powerful degree than the original bile. Experiments with this product have as yet been made only on white rats. They show that slightly larger than the minimum lethal dose

of Indian cobra venom can be rendered non-lethal when mixed with so small quantities of this ox bile product as 0·004 g., 0·003 g., 0·002 g., and 0·001 g. per kilo. These quantities, though small, are not, however, so minute as the quantities effectively antivenomous in similar circumstances of the product derived from the bile of venomous serpents. The evidence already obtained, no doubt suggesting extension and elaboration in various directions, seems, therefore, sufficient to establish that in addition to its generally recognised functions bile possesses the power of rendering inert such organic poisons as venoms and disease toxins.

9.—DIETETIC TREATMENT OF DIABETES.

This was the subject of discussion at the British Medical Association Meeting at Montreal, and was opened by Dr. Robert Saundby, of Birmingham, England. The usual diabetic diet, he said, with its rigid restrictions, can only be carried out by the doctor's authority and the patient's docility. Compromise is the rule, but it is arrived at by the doctor's opinion being sacrificed to the exigencies of the patient. Diabetes mellitus is a clinical group, of which the cases and proper classification are debatable, and on that account variations prevail on views of treatment. Glycosuria is an abnormal phenomenon, and occurs when the amount of carbohydrates ingested exceeds the utilising capacity of the body. This capacity varies in different individuals and perhaps in the same person at different times. Those who become easily glycosuric from slight excess stand in close relationship to the milder form of diabetes. In severe cases of diabetes, glycosuria persists even on flesh diet, a fact explained by the formation of carbohydrate molecules when albumen is converted into urea. Hence, in severe diabetes, there is no physiologic reason for persisting with strict diet in the hope of thereby removing the glycosuria. We must look to clinical results in the hope of justifying our treatment, and must not be led too far by our prepossessions in favour of any disputed pathologic doctrine. Instead of following blind routine, we should give each patient as great a quantity of carbohydrates as experience shows can be assimilated. The following daily allowance will be suitable in an average case:—Milk, 1½ pints; baked potatoes, 6 ounces; levulose, 1½ ounces, and in mild cases, 4½ ounces of dry toast. Fat bacon may be allowed at one meal, if tolerated, but diabetics absorb fat badly. Alcohol, in the absence of albuminuria, may be allowed in quantities up to 4 ounces, especially if taken with dilute mineral acids. It is of great importance to prescribe definite quantities, and to test the effect of the diet by weekly body weighing, measurement of urine, and estimation of sugar, the first of these being the most important.

Dr. Sidney Coupland, of London, England, concurred in the view that no hard and fast lines can be drawn in the employment of a restricted diet; indeed, he has often found that the attempt to enforce the use of an exclusive nitrogenous diet has resulted disastrously to the patient, diabetic coma frequently supervening, especially in cases in which there is a tendency to mental deterioration.

Dr. R. Shingleton Smith, of Bristol, England, thought that while dietetic latitude might be allowed aged diabetic patients, in the case of the young a more or less rigid exclusion of carbohydrates must be insisted upon.

Dr. Ebenezer Duncan, of Glasgow, pointed out that the percentage of sugar in the urine is not the sole criterion of the progress of the disease, nor the elimination of sugar from the urine the only consideration. Cases due to disease of the pancreas are not affected by dietetic treatment, while those of a neurotic type are positively benefited by a restricted and non-saccharine diet.

Dr. James Tyson, of Philadelphia, said that in mild cases the glycosuria is controlled and even cured by dietetic treatment. Glycosuria to the extent of 2 per cent. must be treated by restricted diet or it will invariably run into diabetes mellitus. For two days during each month, he is in the habit of testing the effect of an exclusively proteid diet in his milder cases, and alternating this test, he has experimented with the effect of carbohydrates, also once a month. The polyuria in diabetes he believes to be the result of the glycosuria. A purely proteid diet increases diacetic acid in the urine, and the possible accumulation of this toxin in the blood must not be lost sight of in pursuing a rigid proteid form of diet.

Dr. A. Jacobi, of New York, said that the age of the patient is an all-important factor in the treatment of the disease. Carbohydrates should, as far as possible, be withheld from children, whereas the old may be allowed more latitude of diet, and if emaciating, must of necessity be allowed carbohydrates. He strongly advocated the use of milk, not as an exclusive diet, but as a most beneficial article of diet in diabetics of every age and type. He has not found any benefit to result from the use of skimmed over other forms of milk.

Dr. Lindsay, of Belfast, Ireland, has found all treatment futile to save life in case of the young. Life may be prolonged for a few years and the disease palliated, but not cured.

Dr. Saundby, in closing the discussion, wished it understood that he did not advise latitude in the dietetic treatment of disease only in so far as such latitude is guided by the results of experiment. Individual and not routine treatment should be employed in every case.—*Medical News, September* 11, 1897.

10.—DIABETES MELLITUS AND LESIONS OF THE PANCREAS.

By R. T. Williamson, M.D. (Lond.), B.S., M.R.C.P.,

Medical Registrar, Manchester Royal Infirmary, Hon. Medical Officer, Pendleton Dispensary (Salford Royal Hospital).

[The following are Dr. Williamson's conclusions based on a considerable experience. It will be seen that the etiology of diabetes is still very obscure.]

It is very improbable that all the varied pancreatic changes which have been recorded in diabetes are the result of the disease. It is scarcely credible that one disease—diabetes—should produce such a number of varied affections of the pancreas, as—cancer, cirrhosis, atrophy, abscess, &c. Then, again, from the frequency of pancreatic lesions in diabetes, and from the fact that often the pancreas presents marked changes, whilst in the rest of the organs none of importance are detected, it is improbable that the lesions are accidental. Further, when we consider the remarkable results produced by extirpation of the pancreas, it appears very probable that, in certain cases, diabetes is directly due to pancreatic disease. Whilst experiments on animals appear to have conclusively proved that removal of the pancreas produces diabetes, there are two objections to the pancreatic theory of the origin of diabetes in man, as was pointed out by Minkowski himself. In the first place, pathological changes are not found in all cases of diabetes in man; secondly, sugar is not found in all cases of disease of the pancreas. As regards the first objection, it was pointed out by Minkowski that the number of cases in which the pancreas had been carefully examined microscopically as well as macroscopically was comparatively small. But during the last five years great attention has been paid to the condition of the pancreas in diabetes, and there can now be no doubt that, microscopically as well as macroscopically, the pancreas not infrequently appears normal. The proportion of cases in which the pancreas is diseased can only be correctly estimated by the examination of a series of consecutive cases, and the records of the 23 cases which I have described, furnish, I believe, a fairly correct representation. From these records we see that in 8 out of 23 cases the pancreas appeared normal, both microscopically and macroscopically; and in 4 other cases the only change was atrophy, which was scarcely out of proportion to the general wasting of the body. Hence, in 12 out of 23 cases, diabetes was due to some other cause than pancreatic disease, or the pancreatic affection must have been one giving rise to changes which cannot

be detected microscopically or macroscopically, *i.e.*, a functional disease. It may be pointed out, that not only the pancreas but also the brain, liver, and other organs are very often normal, or present only changes which are undoubtedly of a secondary nature. On the other hand, the importance of the pancreas is evident when we bear in mind the results of experiments on animals, which show that total removal of the pancreas invariably produces diabetes, and that a small portion of pancreatic tissue grafted under the skin of the abdominal wall is sufficient to prevent diabetes, when the whole of the gland is removed from within the abdomen; and also, considering the number of cases recorded, in which marked pathological changes —often almost complete destruction of the gland—have been found in the pancreas at the post-mortem examination of diabetic patients, it appears exceedingly probable that the disease has been due to a pancreatic lesion when extensive changes are found in that gland. But it must be borne in mind that partial extirpation of the pancreas in animals is not followed by diabetes. A small portion of the gland left behind is sufficient to prevent the occurrence of glycosuria. Hence it is very questionable whether diabetes in man can be attributed to pancreatic disease when only slight changes are found.

There is another point to consider with reference to the subject. The pancreas is a very vascular organ, and changes in the nervous system might produce vaso-motor changes in the pancreas and cause an excess of arterial blood to flow through the gland, and so might lead to alteration in the internal secretion, and yet, post mortem, no definite pathological changes might be detected. In a considerable number of cases of diabetes —12 out of 23 cases—it seems probable, therefore, that either diabetes was due to some other cause than pancreatic lesion, or that it was due to some functional or vaso-motor change in the pancreas. In two of the cases a tumour of the pituitary body was probably the cause of the disease. In eight of the 23 cases recorded, it appears very probable that the disease found in the pancreas was the cause of the diabetes. That diabetes is produced in various ways seems very probable. Just as fever is produced in many ways, so it is probable that glycosuria and the accompanying symptoms of diabetes mellitus are produced by several pathological conditions.

Lancereaux recognises three varieties of diabetes—(1) Traumatic or spantaneous diabetes through lesion of the nervous system; (2) diabetes with wasting, or pancreatic diabetes; (3) diabetes with obesity, or constitutional diabetes. Diabetes with wasting is not always associated with pancreatic disease. Lépine has pointed out that the pancreas may be normal in diabetes with wasting, and he has found this gland diseased in diabetes with obesity. And, in the cases recorded above, 10, 11,

12, and 22, there was marked wasting, and yet the pancreas was of normal weight and appearance.

Hoppe-Seyler, Fleiner, and others have recorded cases of diabetes associated with pancreatic disease and arterio-sclerosis. In these cases it appeared probable that arterio-sclerosis of the pancreatic arteries was the cause of the affection of the pancreas. —*Medical Chronicle, May*, 1897.

11.—THE NATURE AND VARIETIES OF ANÆMIA.

By Alfred Stengel, M.D.,
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[The following is taken from Dr. Stengel's paper:]

In considering the possibility of a comprehensive definition of anæmia it is well to observe in the first place that no single constituent occupies a principal place. It is true that all the anæmias of which we have knowledge are diseases in which there is reduction either in the number of corpuscles in the proportion of hæmoglobin or both; but it does not follow that these are the essential conditions. Indeed, it is likely that these are but the more evident expressions of the altered general condition of the blood, other changes being obscure. A recent writer (Frederick Taylor) in discussing anæmia in its various bearings explicitly states that the number and condition of the leucocytes may be disregarded, and I cite this merely in evidence of the too narrow view commonly taken of the disease. I believe anæmia to be a condition of deterioration of the blood with altered relations of the fluid and solid parts. In some cases the number of corpuscles may be approximately normal, the quantity of solid residue, however, being reduced. The change in such cases may affect the plasma primarily or the chemic construction of the individual corpuscle. The definition does not include purely quantitative anæmia, and for the definite reason that I believe the condition of the blood is invariably altered in cases in which there is quantitative reduction. I can not now discuss the possibility of the existence of a continuous insufficiency of the quantity of the blood, but only state my belief in its occurrence. The classification of anæmias is extremely difficult. For clinical purposes we may still retain the terms primary and secondary, with the restriction, however, that these terms are used in a sense different from that originally intended. By the primary or essential anæmia we may designate the group of diseases in which the more striking symptoms are those affecting the blood

itself, or the blood-making organs with the blood. By a secondary anæmia we would designate cases in which the condition of the blood is of less prominence than the primary disease which has brought with it a deterioration of the blood. Viewed from the standpoint of our modern pathology there is little doubt but that pernicious anæmia, for example, is frequently a secondary anæmia, using this term in its older sense; that is to say, pernicious anæmia results from blood destruction dependent on organic disease or intoxication from some part of the organism, and is not a disease dependent primarily upon disorder of the hæmatopoietic organs. It is true, however, that the primitive cause is always less conspicuous in this disease than anæmia itself, whereas in the secondary anæmias, in the clinical sense, the original disease is always prominent.

Chlorosis.—Chlorosis is undoubtedly a hæmogenic disease, dependent on some defect in the general organism, affecting the blood-making power. It is well to recognise in the beginning that this disease cannot be distinguished by the character of the blood alone. It is true that severe cases present a picture of the blood rarely seen in any other condition, but the absolute diagnosis can not thus be made. The strict morphologist and those who rely greatly upon clinical examination of the blood often state the contrary, but without sufficient authority. The chloro-anæmia of tuberculosis and syphilis and gastro-intestinal disease in some cases produces exactly, or almost exactly, the condition of the blood observed in chlorosis. This leads me to question the existence of chlorosis in the male. There is no *a priori* reason for disbelieving the occurrence of this disease in the male, but all clinicians are careful in their statements regarding this possibility, and many frankly state that the disease occurs only in girls and women. In examining the reports of those who claim its existence in the male sex, I have been struck by the imperfect manner in which the diagnosis has been established. A recent report offers no convincing evidence of any kind, and seems to be based entirely upon the existence of a moderate oligochromæmia. Certain competent authors, however, have claimed to have seen genuine cases in males, and I believe that one instance has come under my own observation. In this case the most searching examination failed to disclose any primary disease. The patient was pallid with a peculiar yellowish cast; there was no emaciation, and the tissues were rather flabby. The patient was effeminate, poorly developed, and hysteric. Palpitation and dyspnœa occurred, and there were murmurs over the heart. The number of corpuscles was almost normal, and the hæmoglobin was reduced to about 40 per cent.; constipation was marked. I can not now enter into a discussion of theories regarding the nature of the disease. I must, however, make allusion to one consideration, viz., as to

the advisability of increasing the scope of the term chlorosis so as to include all anæmic conditions in which there is excessive oligochromæmia. My experience makes the decision easy. Clinical observation leaves no doubt as to the existence of a distinct morbid entity, that we term chlorosis. Reduction of hæmoglobin without commensurate reduction of the corpuscles may be important in this affection, but it does not alone constitute the disease. What other alterations the blood may present of an essential kind has not as yet been determined. Undoubtedly, however, there is more than a mere change in the character of the red cells.

Pernicious anæmia.—The discussion of pernicious anæmia need not detain us long. The evidences in favour of an hæmolytic origin of this disease are well nigh absolute. I wish to consider only one question, viz., the scope of the term pernicious anæmia and its limitations. Certain authors, notably Eichhorst, designate two varieties; the primary and the secondary, the latter term including the cases in which definite lesions, probably of etiologic significance, are found. For my own part I can see no justification of this course beyond the deference it implies toward traditional teaching. The first observers regarded pernicious anæmia as essential or idiopathic, admitting no other variety. It is, however, undoubtedly true that many cases occur in which the clinical features are the same, the course and prognosis identical, but in which lesions presumably connected with the development of the disease are discovered. In these cases the evidences of hæmolysis may be pronounced, and the connection between the organic lesions and the anæmia seems direct. On the other hand, the cases in which no such lesions are discovered may present evidences of hæmolysis as clearly as those with lesions, and as the course of the disease is alike I would put all cases in the same group. The diagnosis of the disease therefore rests upon the condition of the blood and the general course of the affection, rather than upon any evidence or lack of evidence of apparent cause. Besides the classical cases of pernicious anæmia I have observed one or two in which the appearances were somewhat different, and which I believe may be of slightly different kind in nature. One of these cases affected a man past middle life who began to grow anæmic without apparent cause and continued to grow more and more pallid until his death. The colour of the skin was almost an alabaster white, there was decided emaciation, rarely if ever any fever, the urine was pale, non-albuminous and watery; the blood presented marked but not excessive oligocythæmia (2,000,000 to 2,500,000), the hæmoglobin was rather more decidedly reduced (30 to 35 per cent.). The corpuscles were altered in form and there were a few nucleated forms. The patient was exceedingly weak, and in spite of active medication died after an illness of several months.

A complete autopsy, including every structure of the body, was performed, and no lesions were found excepting fatty degeneration of the heart, liver, and kidneys, and œdema of the lungs. There was no excess of iron pigment in the liver or spleen; the bone marrow was normal. I cite this case merely as an instance of obscure pernicious anæmia, difficult to classify, and perhaps representing a form of progressive fatal anæmia of a kind different from ordinary pernicious anæmia. The condition of the heart did not at any time cause prominent symptoms. I believe it was secondary.

Leukæmia.—I shall say but a word or two regarding this. Its close relations with Hodgkin's disease is evidenced by the occasional transformation of the latter into the former. Some have held that Hodgkin's disease represents an aleukæmic stage of leukæmia. This may be true of some instances, and I am confident the one disease may lead directly to the other; it does not follow, however, that such a tendency exists in all cases. Regarding the nature of these diseases I can not but consider them as closely associated with sarcoma.

Infantile pseudo-leukæmia.—Von Jaksch described a form of disease, in 1889, under this heading, and held it to be a distinct variety. Similar conditions had been previously more or less satisfactorily described by the Italians. A careful review of the literature of this disease shows that it possesses no distinctive features to warrant its classification as a distinct entity. A large number of the cases are undoubtedly closely associated with rickets; in others syphilis may be the important factor. The pathologic lesions are those of chronic hyperplastic disease of the spleen and liver, and do not warrant the assumption that there is a separate pathology. The marked leukocytosis is striking, but does not constitute a feature of sufficient stability to separate these cases from some other varieties of splenic enlargement.

Splenic anæmia.—This term has been variously used. There are undoubtedly cases of Hodgkin's disease in which the spleen enlarges markedly, while the lymphatic glands remain comparatively little affected. Moreover there are cases of secondary splenic hypertrophy in the course of chronic malaria, rickets, syphilis, and other diseases in which the anæmia is pronounced and the original etiologic factor is difficult to determine. Cases that have come to autopsy, or in which the character of the spleen could be determined at operation for splenectomy, showed that the condition of the organ is for the most part that of chronic connective tissue hyperplasia with some true splenic hypertrophy. It is true there are some cases recorded in which the appearances were those met with in Hodgkin's disease and leukæmia, but such have been very unusual. These observations warrant our disregarding entirely the term splenic anæmia.

I do not know of the existence of a separate disease that we may dignify with this title, or with such names as "primary splenomegaly" or "idiopathic enlargement of the spleen." The conditions of the blood as the characteristics of the spleen do not differ from those met with in well-marked secondary anæmia or splenic enlargements.—*Journal of the American Medical Association, July* 24, 1897.

12.—INFANTILE SCURVY IN CALCUTTA.

By Prandhan Bose, M.B.

It is generally believed that scurvy is a disease peculiar to adult life, and that children, especially of the well-to-do classes, enjoy an immunity from it. I shared in this belief till four years ago, when a case came under my observation which, for the first time, excited the suspicion that it might exist among Bengalee children, though the symptoms may not, at first sight, lead us to a clear perception of its identity. Since then I have been able to gather facts which leave no doubt in my mind that the disease is more common amongst Bengalee children in Calcutta than we are aware of. I will read notes of three cases which I consider best calculated to establish my position. The treatment adopted, having been essentially the same in all the three cases, will be mentioned briefly at the end. My first case was that of a male infant, aged 10 months, who had just cut four of its incisors, and had been suffering from remittent fever and diarrhœa. He was born of perfectly healthy and well-to-do parents, without any history of syphilis or scurvy on either side. He was being treated at the time with diaphoretics and astringents, but was allowed only a small quantity of milk, the deficit being supplemented with barley and water. I should mention that the child was a good feeder while in health, and was unusually large for its age. The fever subsided after a week, but the diarrhœa persisted. It was at this stage that the child came under my observation. I then found that the child's muscular movements were reduced to a minimum, and that it hardly moved its lower limbs at all. It would lie listless for hours together, moaning and evincing the utmost reluctance to being handled. After consultation with another medical man, we both came to the conclusion—erroneous as the sequel proved it to be—that the case was one of anterior polio-myelitis, and recommended the usual treatment in such cases, insisting strongly on the necessity of a more generous supply of fresh milk. Unfortunately the diarrhœa persisted, and the child continued to be fed on barley gruel, in spite of our remonstrances against it. He resisted this injurious dietary for some time more, at the end of which the true

nature of the disease revealed itself in extensive ulceration of the gums and the appearance of hemorrhagic spots on both legs. Blood was also observed in the evacuations. Rapid emaciation followed, and symptoms of rickets manifested themselves. The lower ends of both tibiæ became swollen, and the epiphyses separated from the shaft after some time. From this period till the age of nearly two years the child's life was one of alternate deterioration and improvement, and it was only by the adoption of a most careful dietary that all traces of scurvy were finally removed from his system.

My second case was that of a male child, aged about 18 months, who had cut nearly all his temporary teeth, and had learned to walk. His father, a medical man, being absent on duty, and his mother being in confinement, he was left entirely in the hands of a nurse—an unscrupulous woman, who was utterly unfit for the charge. It was afterwards found that she was in the habit of drinking most of the child's milk and of adding water to it to escape detection. When first called to see the child, I was told that he was suffering from infantile paralysis, and was being treated for it. On examination, I found the child able to stand, but the effort was evidently painful, the muscles (especially of the lower extremities) were flabby, and the skin had a rough, oldish appearance. On close examination purpuric spots were found on different parts of the body. The temperature was 100° F., and the child cried whenever an attempt was made to lift him from his bed. His breath was very foul, and there was extensive ulceration of the gums, which were hanging loosely in several places. I at once transferred the child to the care of a kind-hearted and intelligent lady of the family, under whose supervision, and with the aid of a generous diet, the child was restored to its usual health in less than two months.

My third case is still under my treatment. It is that of a female child, aged 13 months, who has been deprived of her natural food, owing to her mother being the subject of pernicious anæmia since she was brought to bed. As in the preceding case, the child was left to the tender mercies of an ignorant nurse till the age of ten months, when she had an attack of strong fever with bronchitis. In the course of a week she was found to lie all day in bed, with hardly any power to move its limbs. It was at this stage that I first saw her suffering from most of the symptoms detailed above. The lower limbs were flaccid and painful to the touch; the shaft of the right femur and the lower ends of the tibiæ and radii were swollen. The temperature varied between 102° and 100°; petechiæ were found in several parts of the body, and the characteristic ulceration of the gums was largely present. An alterative was at once ordered in the diet of the child, and she is now in a fair way to recovery under the immediate supervision of her mother.

The treatment adopted in each of these cases was essentially the same. The child was fed only on fresh cow's milk, peptonising it whenever digestion was found to be deficient. The juice of fresh fruits, especially orange and pine-apple, was given three to four times a day. Later on Scott's emulsion of cod liver oil with Parrish's chemical food was given with great advantage. The condition of the gums was rectified by close attention to cleanliness and by the application of boroglyceride with glycerine. I ought to mention that the ulceration, as also the peptechiæ, disappeared in each case after the child had taken orange and pine-apple juice for only a fortnight. Due attention was paid to the child's clothing, and it was daily taken into the fresh air as soon as it was found strong enough for it. That the disease in each of these cases was scurvy a few words will suffice to prove. The ulcerated condition of the gums and the presence of hemorrhagic spots in different parts of the body distinctly point to changes in the blood, which can be induced by no other pathological condition known to us. The swellings of the long bones may, indeed, raise in our minds a suspicion of rickets, but these appeared long after the other two characteristic symptoms had manifested themselves, and might, therefore, be dismissed as secondary results. Rickets, as we all know, is a disease usually associated with poverty and hereditary syphilis, but in none of my cases was either of these causes at work. Nor has it ever developed with such rapidity as in the instances I have quoted. But what I believe to be the surest proof of all was the rapidity with which the scorbutic symptoms disappeared after the administration of orange juice and other fresh fruits.—*Indian Lancet, June* 16, 1897.

13.—INFANT FEEDING BY PRESCRIPTION.

By Henry Ashby, M.D., F.R.C.P.,

Physician to the Manchester Children's Hospital, and Lecturer on Diseases of Children, The Owens College.

[The following is taken from Dr. Ashby's interesting paper:]

I have no wish to decry all forms of preserved milk or tinned food for infants' use; in the present state of dairying in this country we cannot do without them, and I do not doubt that many of them are carefully prepared, and are useful as temporary resorts; but no one of them can take the place of the mother's breast or of fresh, clean cow's milk, properly modified and prepared. But the majority of the public accept the *ipse dixit* of the manufacturer and the testimonial-monger as gospel, and the food is taken for many months together, until failing health or a severe illness calls attention to the fact that a perhaps irretrievable error has been made.

Let us turn from these unscientific methods, and see what has been done abroad to place infant feeding upon a safer and more exact basis. In the first place, it is necessary to study the chemistry and composition of breast milk, and its variations in health and disease. It is necessary to note the effects of diet and also mental disturbance on the composition of breast milk, and find out if certain symptoms of dyspepsia in infants are due to an undue preponderance of some of the milk constituents. Much good work has been done in this direction in the United States, especially by Rotch, Harrington, Adriance, and Woodhead. Thus we know that a milk rich in fats and proteids is very likely to give rise to vomiting and diarrhœa, with green and curdy stools. It must be within the experience of most practitioners, that sometimes a newly-born infant taking the breast suffers severely from vomiting and diarrhœa, which may prove fatal, and which is entirely due to the exceptional richness of the colostral milk. Draw off the breast milk and dilute it, or withhold the breast for a while, and everything goes well again. In most of such cases it is unnecessary to wean. We know also that too high feeding on the part of the mother is apt to give rise to rich milk, and consequently causes dyspepsia, colic, and diarrhœa in the infant. A milk poor in fat and proteids is apt to give rise to anæmia and constipation in the infant. A careful study of the composition of human breast milk and the effect of variations in its composition on the health of the infant, is not only of importance in the treatment of infants at the breast, but it has paved the way to scientific infant feeding.

It is not necessary to say that for artificial feeding the only substitute allowable is fresh milk from healthy cows, modified according to circumstances, and consumed within twenty-four hours of the milking. One great difficulty is to obtain a fresh, safe, clean milk. "Milk," says a recent American writer, "as usually sold to-day, is about as suitable a vehicle for the transmission of disease as it was before science revealed the dangers that may lurk in it. Science in the dairy has stopped at cheapening and improving the manufacture of butter and cheese. It has not been, with rare exceptions, extended to improving the milk production either of the farm or for the cities. The milk supply of Boston comes from nobody knows where, and very largely is outside the control of our Health Boards, except as to its solid contents and gross adulteration." We all know what is true of Boston is true of Manchester and other large cities. So keen has this difficulty been felt in America that special milk establishments have been started, ready to supply a sound, safe milk or cream of definite and constant composition, and also to modify the composition of the constituents according to the needs of the infant as directed by the attending physician. In this matter we have fallen a long way behind the times, and have

a good deal of leeway to make up, before we can, in any degree, rival our friends across the sea or some of our European neighbours.

Let us, for instance, note what the Walker-Gordon milk establishments have done in Boston, New York, Baltimore, Chicago, and Montreal. The company are their own cow-keepers, deeming it of the first importance to be in charge of the milk from production to consumption, from first to last. Their first care is to produce a "safe" milk, that is, to be certain the cows are free from infectious disease, and to exercise the most scrupulous care that milk is not in any way contaminated in the byre or in the dairy. In their byres each cow has a separate stall and 1,500 cubic feet of air space, whilst adjoining the byres is an exercising ground, where the cows are turned out for fresh air when the weather permits. The feeding is conducted on scientific principles, a suitable proportion of meal, oats, and beetroot, or other fresh food, being used. The milk is "separated" at once into a 16 per cent. cream and skim milk, cooled by ice, and sent off without delay to their city laboratory. Here the prescriptions given by the attending physician are made up by mixing cream, separated milk, and a solution of milk sugar; the modified milk placed in feeding bottles, stoppered with cotton wool, and sent out in suitable baskets by the company's vans. The prescription form is provided, ready for the percentage composition to be filled in by the doctor, as well as the directions. But little reliance is placed by this company upon sterilisation, as they believe by long heating the milk, changes take place in the fat and proteids, which are the reverse of an advantage to the infant. They only sterilise in case the milk has to be sent long distances, or has to accompany the consumer on board ship. They prefer Pasteurising and preserving on ice, or, indeed, not heating at all, trusting to ice for its preservation for twenty-four hours. But every possible precaution is taken to keep only healthy cows, and to keep the milk free from contamination with micro-organisms. Another good feature about the company is that they themselves do not advise on baby feeding, either directly or by advertisements. They do not prescribe, they only make up prescriptions for physicians. The form must be duly filled up and signed by the attending physician before the modified milk is furnished to the infant's friends.

It is not necessary for me to point out what a great boon such a milk establishment is to the physician. No more tinned or bottled food, no nursery blunders or carelessness in the preparation of the food; the medical attendant can rely on the safety of the milk, and, above all, he knows exactly the composition of the food the infant is taking, and if necessary he can strengthen it, weaken it, and increase or lessen the amount of proteids, fat, or

sugar, by altering the prescription. No rule of thumb, everything is done exactly by trained and scientific workers. There is a great deal yet to be learnt concerning the vagaries of the infant stomach, but we shall never know much more than we know at present unless we proceed upon scientific lines, and have more exact methods than we have hitherto possessed. In the modification of milk, as just described, we have an "instrument of precision" which we can bring to bear on the difficult task of finding a suitable food for all sorts and conditions of infants.

Dr. T. Rotch, of Boston, has been the pioneer in the work of modifying milk, and under his direction the Walker-Gordon Milk Company have carried out the work to a practical success. In a recent paper Dr. Rotch gives some of his experiences of using modified milk in the dyspepsia of infants. Thus one of the commoner difficulties with infants is the difficulty of digesting the proteids of milk. There is colic, flatulence, green curdy stools, and very likely vomiting. In these cases, he says, he has had the most success, not in predigesting the proteids, but by reducing them to a minimum, and gradually increasing their amount as digestion improves. Thus he will prescribe a milk containing only 0·25 per cent. of proteids, and gradually increase up to 1 or 1·5 per cent. In summer diarrhœa it is the usual plan to stop all milk food for a while. He has, however, found that in this troublesome complaint milk from the Walker-Gordon laboratory agrees very well if the fat is kept down to 1·5 per cent., sugar 4—5 per cent., and proteids ·25 to ·75 per cent. It is not necessary to point out how useful modified milk is in feeding infants who are born prematurely, as in these cases it is necessary to keep the proteids low.

With such resources as I have described to fall back upon, it will be possible for the medical man to do more and more without the wet nurse. It is doubtful if cow's milk can be modified so as to make it exactly resemble mother's milk. The proteids of cow's milk differ unquestionably from the proteids of woman's, not only in quantity but also in quality. But there is this undoubted advantage, that in the milk laboratory the percentage composition of the cow's milk can be altered to suit the idiosyncrasies of the infant's digestion, while we have far less control over the percentage composition of the breast milk of the mother or wet nurse. I feel sure that the scientific modification of cow's milk will place in our hands means of dealing with the most serious of infantile ailments such as we have never yet possessed, and I would confidently predict a great future for it.—*Medical Chronicle, August*, 1897.

14.—ON DOSAGE IN CHILDREN.

By J. Walter Carr, M.D., M.R.C.P.,
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The only general rule which has been suggested is the old one, according to which children of one year should have one-twelfth of the adult dose, those of 12 or 14 about half the adult dose, and proportionate doses for intermediate ages. Probably nobody acts very strictly upon this rule, but at any rate it has the advantage of being a very safe one to inculcate upon students, for no one is ever likely to give an overdose by following it. If, however, we want to get the full therapeutic effects of our remedies, it is undoubtedly necessary to discard the rule altogether in many cases. It is known that children tolerate well relatively large doses of several important drugs, but I am disposed to think that we do not as yet sufficiently realise, that there are many other remedies, which must be given to children in comparatively large quantities, if the best possible results are to be obtained from them. To opium and its alkaloids it is of course universally recognised that they are peculiarly susceptible, but with this exception, I believe that children need larger doses of nearly all the more important drugs, than would be given if the old rule already quoted were followed; and also, that not infrequently children of five or six will derive most benefit from doses almost, if not quite, as large as those given to adults. What the explanation of this may be I cannot attempt to discuss here. Very possibly it is due to the more active metabolism of childhood, and hence to the more rapid removal of drugs from the system. The urinary secretion of children is considerably greater in proportion to their weight than in later life, and the influence of renal activity or insufficiency upon the action of drugs and of poisons is well known.

Let us consider first a drug which it has long been known that children can take in large doses, viz., belladonna. The B. P. dose of the tincture for an adult is 5 to 20 minims, and the full dose would cause discomfort to many patients. For children, however, of from 5 to 10 years old, suffering from enuresis, I always begin with 10 minims three times a day, and do not expect much benefit till the dose has been increased to 20 minims or even more; to a large number of children I have given 30 minim doses for many days, or even for weeks at a time, and have practically never had any complaint of discomfort except perhaps some loss of accommodation. To a boy 7 years old suffering from nocturnal enuresis I have given 9 minims of liq. atrop. sulph. every night with much benefit, with only moderate dilatation of the pupils, and no complaint of dryness of the throat; smaller doses were quite ineffectual.

Arsenic is another drug known to be well tolerated during childhood. In children of 7 or 8 suffering from chorea I find that decided improvement (beyond that due to rest, &c.) rarely results until the limit of tolerance has been reached, and that with remarkably uniformity slight toxic symptoms appear with a dose of from 12 to 14 minims of the liquor three times a day. Dr. Wm. Murray, of Newcastle, in his work entitled "Rough Notes on Remedies," advocates a still bolder line of treatment, beginning at once with 15 drop doses of liq. arsen. So far, however, as I have been able at present to try this procedure I have not obtained good results.

It is not necessary to dwell upon the tolerance of children, even of infants, for mercury, for of the many drugs which they bear well, this is perhaps the only one their tolerance of which has been abused; but it is perhaps not so universally recognised that they also take iodide of potassium extremely well. I find it exceedingly useful (especially in combination with stramonium) in cases of asthma in children. These cases are very apt to be overlooked, being regarded as chronic bronchitis, or sometimes as tubercular; but on careful enquiry some family history of asthma is often obtainable, together with distinct evidence of spasmodic attacks of dyspnœa, especially at night. In such cases the same dose of pot. iod. (2 or 3 grs., increased if necessary) as would be given to similar cases in adults, together with gr. $\frac{1}{4}$ of extract of stramonium, is usually very beneficial. I have never known the iodide to produce any disagreeable symptoms, and it may be given over long periods.

Coming now to drugs which are not so often given to children in relatively large doses, mention may be made of quinine. For that common, most persistent, and very troublesome condition—chronic urticaria, Dr. Eustace Smith recommends a large dose of quinine at bed-time, one grain and a half for each year of the child's age. This means giving three grains to a child of two, apparently a very large dose; but I have frequently ordered it, sometimes with, but more often unfortunately without, benefit to the skin condition, yet certainly never, so far as I know, with the production of any toxic symptoms. Even as an ordinary tonic, a child of one year will take well half-grain doses of quinine.

Bismuth is another remedy which children not merely bear well, but which must be given in large doses if it is to be really efficacious in severe cases of infantile diarrhœa. The dose for an adult, of the carbonate or sub-nitrate, being from 10 to 20 grains, the natural tendency is to give one or two grains to an infant, but, as Dr. Cheadle has pointed out (and my experience is entirely corroborative) such small doses are of very little use; 5 or 6 or even 10 grains are required.

Turning to aperients, I have been struck by the large doses which children often need to keep the bowels regular. Cascara may be taken as a good example. The ordinary dose of the liquid extract for an adult is from 30 to 60 minims, or less if frequently repeated. Reasoning from this we should probably give from 3 to 5 minims to a child of one year, and perhaps one minim to an infant a few weeks old. Such a dose would, however, I believe, be found absolutely useless in actual practice. Recently I saw a child, aged 9 weeks, fed only from the breast, who had been costive from birth, the bowels only acting after injections. The child was otherwise healthy. Five minims of the liquid extract of cascara were given thrice daily for two or three weeks, and the bowels became, and continued to be, regular. A still more remarkable case was that of an infant who was first brought to me when ten weeks old for obstinate constipation, the bowels acting only with injections. The child was healthy in all other respects, was fed only from the breast, and the mother did not suffer from constipation. I gave at first 5 minims of the liquid extract of cascara three times a day, and with this the bowels were open about every other day. The dose was gradually increased till 15 minims were given each time, and after taking this for a month the bowels began to act twice a day. The quantity was then slowly diminished to 20 drops every night, and with this the bowels continued perfectly regular until the child ceased to attend, after taking the medicine for five months. Of the compound liquorice powder I have also found children to need unexpectedly large doses.

Salicylate of soda is another most important medicine which children bear very well, not that I have found it necessary to give it in specially large doses, but rather over long periods of time. It is commonly credited with being a very depressant drug, but has not proved so in my experience in children; on the contrary it often seems the best tonic for rheumatic children. No condition is more troublesome to deal with in childhood than rheumatism, in fact for a child saturated with the rheumatic poison the prognosis is well-nigh as serious as for a case of tuberculosis. In some of these cases the anæmia becomes profound, fresh rheumatic manifestations are constantly cropping up, and there is often slight but pretty continuous pyrexia, even when no special cause for it can be found. In these cases I know of nothing so useful as salicylate of soda given for weeks and months at a time. To one patient, a girl of 12, whom I have had under observation for nearly five years, I gave 15 grains, at first four times and afterwards twice a day, for four months, with very great improvement in every respect, especially in the anæmia. I might refer to many other drugs from which I have obtained nothing but benefit by giving them in quantities in excess, and often greatly in excess, of those which would be

administered if the old rule for the dosage of children were adhered to—the iron salts, the bromides, and ipecacuanha wine are notable examples. Doubtless there are many others also which might be pushed with advantage and which perhaps have been by other observers, for in this matter everyone must be guided by prolonged personal experience. The amount of knowledge on this subject handed down by tradition is not large, and refers to only a few drugs. At any rate, I hope I may embolden some to adopt for children, especially for those suffering from chronic or intractable conditions, a more vigorous course of medication than they have hitherto employed, and I believe they will find that the results will fully justify the trial.—*Treatment, July* 8, 1897.

15.—THE THERAPEUTICS OF THE INTERNAL SECRETIONS.

By Francis P. Kinnicutt, M.D.,

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[The following is taken from Dr. Kinnicutt's paper:]

Myxœdema.—The number of cases of myxœdema treated with the thyroid preparations is already very great, and experience justifies the formulation of many practical rules in this method of therapeusis. The most important of these rules were to be inferred from the pathology of the disease. Although the myxœdematous symptoms are speedily removed by the treatment, a discontinuance of the treatment is certainly followed by a return of the myxœdema at varying intervals, showing that the treatment does not cause the gland to resume its function, but exercises its influence by introducing into the economy something which it is presumably the function of the gland to supply. It has been shown conclusively, first, that complete recovery can be effected even after the disease has existed for as long a period as fourteen years and in the case of patients bed-ridden and presenting the gravest symptoms; and, secondly, that the maintenance of health can only be secured by continuous treatment during the lifetime of the patient. The requisite dosage after the removal of the myxœdematous condition has been found to vary, and depends upon the degree of loss of glandular function. Equally good results are obtained from a single daily dose or a larger dose given at longer intervals. It has been found that this interval rarely can exceed a week.

Cretinism, sporadic and endemic.—Continued experience during the few years which have elapsed since the treatment of cretinism with thyroid preparations was first instituted has confirmed the hopes which were originally entertained of its efficacy. It has been shown conclusively, first, that in sporadic cretinism the myxœdematous symptoms can speedily be removed, thereby effecting a marvellous improvement in the frightful deformities incident to the disease; secondly, that the treatment is capable of developing the natural tendencies of the growth of the skeleton which were in abeyance, and that this latent capacity is in apparent inverse ratio to the age of the patient; thirdly, that a striking improvement in the mental condition is effected, although occurring more slowly and in a similar inverse ratio to the age of the patient, as observed in the skeletal growth. In view of the facts related it is not unjustifiable to conclude that the treatment of cretinism with the thyroid preparations, if initiated early in the disease and systematically continued, holds out every promise of the child's development into a healthy adult. The therapeutic value of thyroid preparations in cretinism has suggested their use in cases of idiocy more or less resembling in bodily and mental defects the cretinous condition. Telford Smith has tried the treatment in idiots belonging to the Mongol type, who most closely resemble the cretin. His experience has been that a physical and mental improvement occurs, and that it is inversely to the age of the patient; that the improvement is neither so rapid nor so marked as in the cretin. There is some improvement in the condition of the skin; it desquamates, but does not become normally smooth; chronic marginal blepharitis improves and in some cases is cured. Growth improves as well as the mental condition.

Goitre.—The benefit derived from the use of the thyroid preparations in cases of goitre in which the absence of constitutional symptoms indicates that the function of the thyroid gland is still largely preserved, has not been satisfactorily explained. The benefit consists in a retrogression of the goitre through atrophy of the hyperplastic and adenomatous tissues. The maximum improvement is obtained in goitre of the simple hyperplastic form, although adenomatous nodules in many instances shrink in a striking manner. Large collections of colloid and cysts are apparently unaffected by the treatment. The diminution in the size of colloid goitres Kocher attributes to a shrinking of the parenchymatous tissue in which the colloid is imbedded. Although marked diminution in size in the varieties of goitre which have been mentioned, and a corresponding improvement in the patient's general condition, occur, complete disappearance of the tumour has rarely been noted. The reports of various observers of the permanent improvement or cure are not sufficiently full to justify positive statements on these points at the

present date. Recurrence of the tumour after partial or complete disappearance, at varying intervals after the discontinuance of the treatment, certainly occurs in many instances, and suggests the possibility that continued use of the thyroid preparations in a modified way for indefinite periods may be found necessary.

Exophthalmic Goitre.—The natural fluctuations of the disease, improvement alternating with recrudescences, suggest that the exceptional reports of improvement under this treatment have been based upon insufficient grounds.

Insanity.—A relatively large number of cases treated by this method have been published. Bruce has reported sixty cases, twenty-five males whose ages ranged from 20 to 55 years, and thirty-five females whose ages ranged from 20 to 50 years. Of the males seven recovered under treatment, and there were seventeen recoveries among the females. Thirteen of these latter were either puerperal, lactational, or climacteric cases. Babcock has published twenty-two cases treated in the St. Lawrence State Hospital for the Insane. In four cases there was recovery; in eleven, improvement. The four recoveries were in patients suffering from recurrent mania and melancholia. Improvement was obtained in cases of acute mania and acute melancholia, in two cases of acute delirium, in a case of chronic mania, and in one of chronic melancholia. Relapses occurred in four cases. In one of these (chronic melancholia) relapses followed two successive treatments. Allen Starr's extensive experience has led him to place the highest value upon the treatment in a form of mental disturbance occurring at the climacteric. He describes it as a mental depression with anxiety and morbid fears, but without delusions or insomnia. Starr is inclined to believe that a functional disturbance of the thyroid and ovaries is associated in these cases.

Obesity.—In patients who react to treatment the loss of weight varies from 1 to 5 kilogrammes (2 to 11 pounds) a week, without restriction of diet, but after a time a limit is reached beyond which further reduction is not obtained. The loss of weight is more rapid during the first days of treatment than later; subsequently it varies in amount from week to week, without explainable reason, the conditions of life remaining the same. The loss is usually unattended with any disturbance of health. As a rule, the discontinuance of treatment is quickly followed by an increase of weight, which shortly reaches its former level. Only exceptionally is the improvement maintained for any considerable period, although careful dieting and exercise prolong its duration.

Cutaneous Diseases.—The expectations originally entertained of the value of thyroid treatment in diseases of the skin have not been fulfilled. Only in psoriasis has some small measure of

success been obtained. Even in this disease the effects are uncertain; it is impossible to differentiate the type of the affection in which benefit may be expected, and in many cases an aggravation of the lesions occurs.

The Adrenals.—I have been able to collect forty-eight cases of Addison's disease treated with various adrenal preparations. They have been tabulated with brief notes of their salient points. Six patients are reported as cured or practically well, twenty-two improved, eighteen unimproved, and in two instances an aggravation of the symptoms is stated to have occurred during treatment. Among the six recoveries, in one instance the patient has remained well for four months; in a second case the treatment was continued for four and one-half months, the pigmentation disappeared, and the patient was able to return to work. He is still under observation one year and a half after the treatment was instituted, and is still well. In a third case the patient was practically well at the date of the last report, twelve months after the beginning of treatment. In the cases in which improvement was noted relapse and death occurred in one; in another the improvement was only temporary, death following; in a third case, the treatment was irregular, and the patient was relapsing at the date of the last report. In a fourth case improvement in the asthenia and pigmentation was observed until the end of the fourth week, when, the appetite failing, treatment was suspended, and death occurred two weeks later. In another patient there was marked improvement during regular treatment. During the subsequent months the treatment was irregularly pursued, and eight months later the patient was reported as failing rapidly. In Bramwell's case there was remarkable improvement for a year, the patient being able to resume his ordinary occupation, when death occurred. In still another case improvement had been maintained for twenty months at the date of last report. The patient had been able to return to work, but relapses occurred when the treatment was suspended. Finally, in one case there was improvement for three months, when the patient died quite suddenly on the discontinuance of the treatment. In many of the cases related the association of adrenal disease with grave tuberculous lesions elsewhere in the body precluded the possibility of obtaining more than an amelioration of symptoms; nevertheless, the results secured justify the hope that perhaps with the isolation and differentiation of the several active principles, if several there be, of the glandular structures, an efficient therapeusis may be obtained for the simple atrophies and fibroid degenerations of the adrenals, which it has been demonstrated may be both localised and provocative of some of the phenomena of so-called Addison's disease.

Thymus Gland.—I have collected 62 cases of exophthalmic

goitre treated by this method. In 36 cases improvement of varying degree occurred; in 25 there was no improvement, and in one there was an aggravation of symptoms, resembling in all respects that commonly caused by thyroid feeding in this disease. In one of the unimproved cases a combination of thymus and thyroid was employed at first, and later the thymus alone was given until a few days before death. In judging of the therapeutic value of the thymus treatment in exophthalmic goitre too much reliance should not be placed upon the relative number of published cases of successes and failures. Favourable results from a new remedy are more frequently reported than failures. Finally, in few diseases is it as difficult to speak positively of the value of any particular method of treatment. The natural fluctuations of the disease are great, and improvement and recrudescence occur often in an unexplainable manner.

Goitre.—Mikulicz has reported 30 cases of goitre treated with thymus extracts. In 20 cases the goitre underwent a decided reduction, as ascertained by exact measurements, and subjective improvement followed. Among these are several cases which had only slightly improved or which had become worse under thyroid treatment. A complete cure in the anatomical sense was only obtained in two cases. With the exception of one case (mixed nodular and diffuse parenchymatous) they were all diffuse hyperplastic tumours. Five of the unsuccessful cases were of the nodular, and five of the diffuse hyperplastic form.

Pituitary Bone.—Clinically, in a few cases the administration of pituitary extract has been found to relieve certain of the characteristic symptoms, a result which does not harmonise with the hypersecretion theory of acromegaly; and yet such a result is not necessarily incompatible with it. Still less does it negative the possibility of a hyperactivity of one element in a composite function, the product of which may not be present in the preparation as actually administered. In conclusion, it may be said that while the whole subject presents an accumulation of theories having an exceedingly slender support on definite findings, it is probable that the pituitary gland bears some unascertained relation to the nutrition of bony and dermal tissues, as a result of which an overgrowth of them accompanies changes in the gland which presumably affect its functions. Whether these changes are primary is as yet unknown. I have collected thirteen cases of acromegaly treated with pituitary preparations. In seven cases varying degrees of improvement were noted. In one of these the improvement occurred under the combined use of pituitary and thyroid preparations. In five cases no effect was obtained; and in one case the patient was made worse by the treatment.—*American Journal of the Medical Sciences, July,* 1897.

16.—THE VALUE AND DANGER OF CANTHARIDES.

[The following is taken from a leading article in the *Therapeutic Gazette*, May 15, 1897. Most will endorse the opinion that great care is needed in the use of cantharides in cases of nephritis, and especially when the latter complicates the acute illnesses.]

In the case of cantharides, a drug which is employed so frequently, it is of importance to recognise the fact that it not only possesses much power for good but also, in persons with easily irritated kidneys, the possibilities of producing deleterious effects not only when it is administered internally by a dermatologist for certain skin lesions and by the ordinary clinician for certain low grade inflammatory processes in the kidney, but also when it is applied externally for the purpose of producing counter-irritation and vesication. Whatever may be the opinion of the best therapeutists as to the value of cantharides in minute doses for controlling or overcoming albuminuria due to subacute or chronic parenchymatous nephritis, there can be no doubt in the minds of the majority of physicians that the external use of this drug over the renal region in cases of congestion of the kidneys is often followed by the most beneficial results. Personally the writer of this editorial is convinced that the internal use of cantharides for the relief of albuminuria is resorted to too infrequently, since in quite a large number of cases he has seen beneficial results follow its employment; nor is he alone in this conclusion, for some of the English therapeutists have gone so far as to recommend minute doses of the tincture of cantharides for hæmaturia depending upon acute inflammation of the kidney after the first blush of its severity has passed by. Quite recently Du Cazal, in one of the French journals, has strongly supported this use of cantharides, having followed the recommendation made by Lancereaux in employing this method. Out of five cases, all of which followed attacks of infectious diseases, such as pneumonia and scarlet fever, four entirely recovered from the albuminuria. As pointed out, however, by Saundby in the *Birmingham Medical Review*, the results of Du Cazal are by no means as positively favourable as they would appear at first glance, for in many instances persons suffering from the albuminuria due to the infectious diseases recover without treatment, provided ordinary care is taken as to hygienic living, diet, and protection from cold. Saundby, on the other hand, states that he tried cantharides systematically in cases of nephritis some years ago, and came to the conclusion that it exercised no specific effect in controlling the excretion of albumen. In regard to the possibility of deleterious influences following the employment of cantharides externally, a case which has recently been reported by Huchard is of considerable interest. It was that of a girl of 18, to whose epigastrium was applied a small

blister six square centimetres in size. As a result of this she developed an acute nephritis, with anasarca, intense dyspnœa, convulsions, and almost complete uræmic amaurosis, and associated with these symptoms she also had almost complete suppression of urine. He also mentioned two fatal cases caused by the application of cantharidal blisters, and what he said in denunciation of this form of counter-irritation was supported by two other practitioners who were attending the meeting at which Huchard made his report.

On the other hand, Dr. Ferrand, a practitioner who also joined in the debate, pointed out what Saundby and others know full well, namely, that blisters were useful and not dangerous, unless they were left on too long. It seems to us that the physician who desires to employ a cantharidal blister should remember two facts, namely, that blisters of large size are contraindicated in the presence of renal irritation or inflammation, and that in any event they should not be allowed to remain in contact with the skin longer than is necessary to produce the vesication. If these facts are borne in mind, the evil effects which are feared by Huchard will not be met with, and patients will not be deprived of a useful though painful therapeutic measure owing to the fear of the physician that an accident may occur. Convinced though we are that vesication is of value in the condition which we have named, we do not believe that it is to be employed recklessly or when milder counter-irritants, such as the ordinary rubefacients, would do as well. In Huchard's case the cantharides were applied to relieve gastralgia. Again, we think that the profession is gradually coming to the view that the application of cantharidal blisters to the walls of the thorax in the treatment of pneumonia and pleurisy, except in the very earliest stages, are of little real therapeutic value, and frequently cause the patient a great amount of pain and annoyance. In children who are suffering from thoracic inflammations blisters certainly ought not to be employed, first, because of the pain; second, because of the nervous irritation which they produce; third, because if the child is ill for a considerable period of time difficulty may be met with in healing of the sore; and lastly, because renal irritation and irritative fever are apt to be caused by the external use of this drug in this class of patients.

17.—MUSHROOM POISONING.

By Guido E. Caglieri, M.D.,
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[The following is taken from Dr. Caglieri's interesting paper:]

Last February I was called in consultation to see a family of six persons who had partaken of poisonous mushrooms, which

resulted in the death of three of the children. I consider it interesting to report these cases from the fact that the symptomatology was unlike that of the usual cases of reported poisoning, and furthermore for the reason that poisoning by toadstools should be more carefully studied by physicians and reported, so that, in view of the uncertainty which exists in the literature on this subject, we may gather more extensive data from which to draw our deductions. The special mushroom which produced death in these cases was pronounced by botanists to be the Agaricus muscaria, but I suspect there was more than one variety among those eaten; therefore not too much importance must be attached to the above classification.

Case 1.—Boy, aged 8; robust; he ate a little over one-half of a medium-sized fungus about six o'clock on the evening of February 24; he slept well all night and awoke next morning with little disposition to play with his brothers before getting up, as was his custom each morning. When he arose from bed he had a loose passage but complained of no pain. The father noticed that his eyes had not their usual brightness. When dressed he complained of being short of breath and wanted to stay in the open air. The bowels again moved, with more pain. The father, suspecting the mushrooms, then administered castor oil to all the family, which was vomited by them. After this the diarrhœa increased and likewise the griping, but no further vomiting followed the administration of the oil. At three o'clock the boy was feeling fairly well, but quite weak; in the meantime the father had consulted a physician, who gave him some chlorodyne for the boy. During the early part of the evening he was taken with convulsions which increased in intensity, and at eleven o'clock he expired in one of these attacks. I did not see this patient, being called in consultation the next morning.

Case 2.—Boy, aged 5; robust; he ate the same quantity as the former, and likewise slept well during the entire night, looking dull in the morning; after dressing he went into the yard to get some fresh air, complaining of dyspnœa as his brother had done. After he was given the oil he vomited, which was soon followed by diarrhœa, but he did not complain particularly of pain; during the evening he stated that he felt well, although the father says he had the same dull look that was present during the day. After the death of the first patient he was put to bed, and slept apparently soundly during the night, being awakened only for his medicine. Following the death of the first child, another physician was called in, who advised the administration of two drops of tincture of belladonna every hour; this was given to all the patients during the rest of the night. The following morning the boy on awaking asked for his coffee, which was at once ejected by the stomach, followed by general convulsions. It was at this time that I was sent for and found the boy in the dorsal decubitus, breathing heavily and quickly with slightly livid face. The pulse was very rapid, empty, easily compressed but regular. It was impossible to arouse him; the pupils were contracted and did not react to light; toward the end they dilated widely. The body was dry with the exception of the face and neck, which were slightly moistened with perspiration. It was quite evident that the patient was moribund and after several hours of convulsions he died.

Case 3.—Boy, aged 10; robust; ate about one-sixth of a mushroom. During the same evening he slept well, and next morning with the exception of the sickness produced by the oil felt well enough to attend school,

where he had a slight attack of vomiting at ten o'clock. During the rest of the day no particular illness was complained of, with the exception of a feeling of lassitude and restlessness. I saw this patient in the morning, thirty-six hours after the ingestion of the mushrooms; at this time there was an expression of extreme fear on his countenance. The pupils were contracted; the head and neck were covered with perspiration; the respirations were rapid and full; the pulse was rapid, full, and regular. There was no vomiting, diarrhœa, or colic. The intelligence was considerably blunted. After a few hours I again saw him and he was then comatose, although when shaken violently and asked if he wished to drink he would answer in the affirmative. The pulse at this time was slower and the pupils were more dilated, but as he was now being subjected to injections of atropine this change was probably due to the drug. His condition for the next fifteen or twenty hours remained the same; there were occasional attempts at vomiting, and there seemed to be a suppression of urine, which ceased after the application of hot poultices to the loins. The evening of the third day after eating the fungi the boy grew worse; his stupor became more profound, the pupils more dilated, the pulse more quickened, more compressible and irregular, the breathing acquiring the characters of Cheyne-Stokes respiration, and lastly a hiccough developed. At three o'clock the next morning there was a spasm of the lower jaw, which lasted but a few minutes, and then death supervened, the pulse becoming rapidly feebler and irregular just before the end. Death occurred in this case eighty hours after the boy had eaten the mushrooms.

Case 4.—The father, a man of about 38, strong, robust, and of unusual intelligence, ate by far the most of the mushrooms, having consumed at his dinner nearly two mushrooms. That night he felt a little dull and the next morning on awaking felt more so. However, he overcame this feeling and went out in the morning to get the castor oil, which he, like the others, vomited. He again vomited at eleven o'clock in the morning. During the day he was stupid, but still felt anxious regarding the children. He continued in this state until after the death of the first boy, when he felt so ill that he was obliged to go to bed, attributing his illness to grief at the death of his son. He could not sleep, but yet had a feeling of satisfaction; he realised that his son was dead yet did not care. During the early hours of the morning he attempted to arise but found he could not move except after great effort. His feeling of apathy then gave way to one of great fear for the safety of the children. In the meanwhile the gastro-intestinal symptoms were becoming more marked, and he was taken with frequent desire to go to stool and slight vomiting. I saw him at this time and found him in a stupor; he was easily aroused and was then able to answer questions fairly intelligently. The skin was moist with perspiration; the pulse small and rapid but regular; the breathing quick, shallow, and noisy; the pupils were slightly contracted. This condition continued for a period of twenty-four hours or more, and then gradually improved, so that in a few days he was entirely well with the exception of an urticaria which developed over the body generally.

Case 5.—The mother, aged about 35, robust and healthy. Nervous temperament. She showed few signs of intoxication with the exception of slight diarrhœa and vomiting, with some mental excitement. After the death of the third son she had an attack of hysteria, which soon passed and there was no further trouble. She ate only one-sixth of a mushroom, which accounted for the mildness of the case.

Case 6.—Little girl, aged 4; ate about one-sixth of a mushroom; her symptoms were the mildest of all; she had only a little vomiting on the second day and practically no other signs. The treatment was mainly prophylactic in her case.

This is a *résumé* of the cases which it was my lot to have to treat. I presume my readers will be struck, as I was, with the difference in time it took the mushrooms to prove fatal. The second son, who ate about one-half of a mushroom, died in about thirty hours, whereas the younger brother died after eating the same quantity twenty hours later. The eldest son, who ate the same quantity as the little girl and mother, succumbed after eighty hours, whereas his sister and mother were but slightly disturbed. Lastly, the father, who ate nearly two entire mushrooms, was rendered quite sick, but recovered after eating nearly four times the quantity that proved fatal in thirty hours in a boy of eight years. It would be impossible to draw any conclusions from the above figures except what seems to me to be most likely—that there was only one poisonous mushroom in the small lot that was cooked, and that this was divided among the boys, the others suffering from the edible fungi being impregnated with poisonous principles in the process of cooking. The study of poisonous fungi and the nature of the poison is one of the most difficult in toxicology. Cases of poisoning by mushrooms are fairly common, especially in winter and spring, but fortunately many terminate favourably even after severe manifestations of toxic action. The poisoning due to mushrooms manifests itself in two ways; the one with marked gastro-intestinal symptoms coming on soon after the ingestion of the fungi and rarely fatal in adults, the other with similar symptoms soon superseded by a narcotic condition frequently ending fatally. The treatment to be instituted in poisoning by this non-muscarine-containing mushroom consists only in allaying the pain, nausea, and diarrhœa, and stimulating the heart with mild cardiac excitants. The form of poisoning which occurred in the cases I have reported was not of this type, but was due to the deadly Amanita muscaria. The poisonous principle is generally conceded to be muscarine, first isolated by Schmiedeberg. Schmiedeberg found that one-thirteenth of a grain of muscarine in the human subject caused myosis, loss of focalising power, abundant secretion of saliva, flushing of the face, perspiration of the whole body, griping and rumbling in the bowels, and a feeling of weight in the head. Moreover, when we consider that the quantity of muscarine in the amanita in the dry state is one-fifth per cent., and that the quantity of mushrooms eaten by the eldest of the three boys that died was so small (only one-sixth of a small mushroom which was rich in water), was sufficient to produce death in 80 hours, I consider it indeed a very powerful poison, or else there must be present in the mushrooms secondary poisons of which we have no knowledge.

The treatment of these cases is, as in all cases of poisoning, to empty the stomach if we think that any food remains in this organ, and to administer a good purge; next to support the

strength of the heart by the injection of stimulants. The drug *par excellence* which is to be used for this is atropine. This is a real antidote to muscarine, having in every respect a physiological action exactly opposite to that of muscarine. The treatment followed in my cases was that pursued and recommended by all toxicologists. Owing to the fact that I saw the patients as late as 36 hours after they had eaten the mushrooms, I considered it useless to administer an emetic, and furthermore it was evident from the condition of the patients that the poison had to be combated in the circulation. The patients were immediately given injections of one-fiftieth of a grain of sulphate of atropine and one-sixtieth of a grain of strychnine alternately every hour. The children were given less strychnine in proportion than the adults, but were given the same quantity of atropine, with the exception of the little girl, who, owing to the mildness of her symptoms, did not require very active treatment. After the injections, the pupils dilated widely and the heart and breathing improved, but the coma remained unchanged. The patients were given in addition cracked ice with cognac and seltzer by the mouth. Authorities all agree that fluids by the mouth are injurious, owing to the fact that they favour the absorption of the muscarine, which is very soluble in water. This objection, though, is not to be considerd in my cases, for the muscarine had undoubtedly all been absorbed, and the administration of water could only do good by favouring the flow of urine, and in this way accelerating the elimination of the poison from the system. Atropine is unquestionably the most reliable antidote that we possess for mushroom poisoning. Comparing the action of muscarine and atropine in the animal body, we find an almost complete physiological antagonism. Why, then, you may ask, were we not more successful in our cases? The reasons are several. (1) The time which elapsed from the fatal meal to the beginning of the manifestations of toxic symptoms was so great that the poison was undoubtedly all absorbed, and hence emetics, purges, &c., were useless. (2) The period which elapsed from this time to the injections of atropine brings up the total to about 36 hours before the patients received the treatment which might have saved their lives. (3) The injections of atropine should have been made more frequently and in smaller quantities. (4) The slow elimination of the poison from the body owing to the suppression of urine. This suppression of urine is common in cases of poisoning from many other substances, and I have no doubt is caused by the great lowering of blood pressure due to the vasomotor paralysis.

The ideal method of treating any case of poisoning in which the toxic substances have already entered the blood would be, first, to stimulate the heart only to that point necessary to overcome the decreasing action of the poisonous drug; second, to

hasten the elimination of the poison as much as possible; third, to dilute the poison as much as possible within the body. Regarding the use of cardiac excitants in poisoning cases, I consider that the greatest discretion is necessary, for at this time the heart is labouring under the greatest disadvantages, and the slightest overstimulation may cost the patient his life. With the usual way of administering stimulants the heart is thus alternately overstimulated and then allowed to beat on in a weakened condition. The obvious way to correct this would be to furnish the antidote in small doses, but to inject it continuously. The way in which I propose to do this would not only fulfil this condition but would also raise the blood pressure in the arteries and dilute the poison. I would suggest injecting subcutaneously a large quantity of fluid, say six or eight ounces every hour, in which a small triturate of the special stimulant used is dissolved. I would precede this by at least one injection in the ordinary way and then resort to the method I have described.

I have as yet had no experimental or clinical experience with this method, but I hope that some may see enough in the suggestion to try it at the first opportunity that presents itself and report with what success.—*Medical Record, August* 28, 1897.

18.—DISEASED AND UNWHOLESOME MEAT.

By T. Robinson, M.R.C.S. Eng., L.R.C.P. Lond., D.P.H. Camb., Medical Officer of Health for Burton-on-Trent, late Assistant to the Medical Officer of Health, Nottingham.

The following notes are written with the view of drawing the attention of general practitioners to the subject of meat in its relation to disease. In the following table good meat is broadly distinguished from bad, but it must be understood that the goodness here is simply that of meat the healthy nutrition of which has not been impaired, while the badness is that of the exact converse. Beef is the flesh specially described, but the standard may be applied to other flesh with slight variations.

BEEF.

"Good" Meat.	"Bad" Meat.
Colour.	
Bright red, "marbled" with fat.	Dusky red or pale, or both; brownish or discoloured patches; or may be even greenish if putrefactive.
No hemorrhage spots.	Hemorrhagic spots frequent.

Fat.	
Firm, whitish with tinge of yellow. Not bloodstained. Containing no jelly or watery juice.	Soft, unset, as a rule yellow, and often stained or studded with hemorrhagic spots. May contain jelly or watery juice.
Smell.	
Fresh and not unpleasant.	Sickly, offensive, or of drugs.
To Touch.	
Firm and elastic. Not wet or sticky. No pitting or crackling on pressure.	Soft, easily torn, wet or sticky. Pitting on pressure.
Juice.	
Bright red in colour; sweet and fresh to smell.	Dark in colour, or very pale, with bad odour.
Taste.	
Pleasant.	Absent, or unpleasant.

Horse-flesh is of a dark purple colour, has a peculiar sickly odour, and is not "marbled" with fat; the muscular fibres are much coarser, and the fat a greasy yellow. Calf-flesh is paler, and not so firm to the touch as beef-flesh. The flesh of the pig is also paler and less firm, and the fat softer than that of the beast. Good mutton is in colour a duller red, is firm, and has a hard white fat. I shall now proceed to describe in detail some of the special causes of unwholesomeness in butchers' meat.

(1) *Tubercle.*—Tubercle is the most important and the most common of the diseases of animals, and is therefore considered first and separately. So common is tubercle among animals, the flesh of which come under the head of butchers' meat, that I should say quite 75 per cent. of all meat "seized" under the Public Health Acts is condemned on account of it. It is found most frequently in the lungs, pleura, lymphatic glands, liver, peritoneum, omental fat and kidneys, in the order named. Seldom, if ever, is a case of tubercle found in which the lungs are not affected, and it has been estimated by McFadyean that only 3 per cent. of beasts suffering from tubercle have that disease affecting the udder. Oxen, swine, and sheep suffer most frequently in the order named. The disease usually shows itself in the form of nodules or caseous masses, varying in size from that of a pin's head to an orange, in the lungs, the liver, kidneys and lymphatics; but the peritoneum and pleura are generally studded with hard nodules, giving rise to the terms "grapes" and "pearls" in use among farmers and butchers. The nodules or knots are by some called "kernels," but kernel is the name generally used by butchers for a lymphatic gland. Some caseous nodules are hard or calcareous, some softer and breaking down, and some are almost encapsuled and separated from the surrounding tissues. Calcareous particles are almost invariably present

in the cheesy tubercle of cattle; among the latter also tubercle is much more prone to form hard calcareous masses than to break down. The flesh of animals suffering from advanced tubercle is most frequently thin and wasted, and has very little fat; it is dark in colour, sets badly, and is often wet or even dropsical in places; the nutritious quality has without doubt greatly deteriorated—putting aside the fact that it may contain tubercle bacilli or spores—and should therefore be condemned. On the other hand, I have seen, and not uncommonly, animals in good condition, fat and firm, and carrying plenty of flesh, that have had to be condemned after being slaughtered on account of generalised tuberculosis; and in one case—in a beautiful beast—the deep inguinal glands were found to contain small caseous nodules in addition to generalised tubercle in chest and abdomen. It was impossible to tell during life, without the aid of "tuberculin," that these animals were suffering from tuberculosis. From this it is clear that animals may suffer from generalised tuberculosis, either in the nodular or caseous form, and yet grow fat, when there is no "breaking down" into pus; but when once the "breaking down" commences then the condition of the animal begins to deteriorate. Now the bacillus of tubercle is killed by a temperature of 70° C. or 80° C., but not so the spores; these, we know, will resist boiling for fifteen minutes. That tubercle bacilli can be cultivated under favourable circumstances from caseous matter is, I think, now beyond dispute. Dr. Woodhead tells us (in his evidence before the Royal Commission on Tuberculosis) that the temperature in the centre of a cooked joint of over 6 lbs. in weight seldom reaches 60° C., and goes on to say "ordinary cooking, such as boiling, or more especially roasting, though quite sufficient to sterilise the surface and even the substance for a short distance from the surface of the joint, cannot be relied upon to sterilise tubercular material (and caseous matter) included in the centre of rolls of meat, especially when these are more than 3 or 4 lbs. in weight. The least reliable method of cooking for this purpose is roasting before the fire; next comes roasting in an oven, and then boiling." Now, it comes to this—by way of illustration—given a leg of mutton or a round of beef rather undercooked with a caseous gland embedded somewhat deeply in the same; what amount of risk of infection is run in eating the flesh? Again, what risk is run when a medical man orders a child or adult raw—or nearly raw—meat juice, and such material is derived from a tuberculous animal? We can only answer that there is a very appreciable risk, and that this has been proved by direct experiment on the lower animals. Kästner obtained positive results by the injection into animals of the juice of confiscated flesh of tuberculous animals; and Steinheil succeeded in transmitting tuberculosis

to guinea-pigs by administering the expressed juice from flesh in which no tubercle could be seen. That milk is a source of grave risk cannot be disputed. The practical question, then, that we have to answer is this:—Is there any actual risk of infection through the ingestion of uncooked or partially cooked flesh or milk of tuberculous animals? The answer is undoubtedly in the affirmative. The Jews are much more exempt from tubercle than any other race, and there is little doubt but that much of this exemption is due to the great care exercised in the choice and dressing of their meat. The following two facts are worthy of note:—(*a*) in Copenhagen slaughter-houses in 1890-3, inclusive, the percentage of tuberculous animals was 17·7 for oxen and cows, 15·3 for swine, 0·2 for calves, and 0·0003 for sheep; in the Berlin slaughter-houses in 1892-3 the percentage was 15·1 for oxen and cows, 1·55 for swine, 0·11 for calves, and 0·004 for sheep; in Edinburgh of 300 milch cows slaughtered in 1890 no less than 40 per cent. (varying from 12 to 83 in one cowhouse or another) were found to be tubercular; (*b*) in 1895 there were in England 7,389 deaths from tabes mesenterica, of which 3,855 were under the age of one year; 6,746 from tubercular meningitis; 42,490 from phthisis, and 6,084 from other forms of tubercle, making a total of 62,709. Without adding marasmus, bronchitis, diarrhœa, and pneumonia—some of which are undoubtedly tubercular—this is a tremendous total, almost the whole of which can be laid down to tubercle. Having answered—as we are certainly justified in doing—the question respecting the actual risk of eating tuberculous meat and drinking tuberculous milk, in the affirmative, what a grave responsibility rests with the public authorities in dealing with the traffic in diseased or possibly diseased animals! What new importance attaches to the due administration of the Dairies and Cowsheds Orders and to the question of the establishment of public abattoirs!

(2) *Parasitic Diseases.—Liver fluke* (*Distoma hepaticum*)—commonly known as "rot in sheep." This parasite is shaped like a fluke fish, from whence, no doubt, it gets its name, and measures from 1 to $1\frac{1}{2}$ inches in length, about half its length in breadth, and from $\frac{1}{16}$ to $\frac{1}{8}$ in. in thickness. It inhabits the bile ducts, is commonest in sheep, but is also found in oxen. It causes blocking of the bile ducts, destruction of the liver substance, and wasting of the liver, diarrhœa, jaundice, falling off of the hair, and general dropsy and emaciation. The flesh has to be judged on its merits, but the liver must most certainly be condemned. The Scotch shepherds eat flukey liver, and say it does them no harm; unfortunately, there are not enough necropsies of these brave shepherds to confirm or refute their statements. *Measles in Pork* (*tænia solium*).—This disease is due to the cysticercus cellulosæ being disseminated in the liver, muscles, connective tissue and brain, &c., but not in the fat.

The cysts are on an average the size of a pea, and are noticeable during life beneath and on the sides of the tongue. Hooklets can be obtained from the cysts; and some cysts may have undergone calcareous degeneration. All measly meat must be condemned, as this cysticercus is one of the two phases in the life of the tænia solium, which latter is developed from it in man. *Trichinosis* (*trichina spiralis*).—This nematode affects the muscles of pigs and other animals in the form of an ovoid cyst just visible to the naked eye. Their demonstration is made easier if a small portion of the muscle is first treated with liq. potassii. The cyst then becomes more distinct, and the worm more easily seen with a magnifying glass. The miniature worm is coiled up in the cyst and is about $\frac{1}{30}$ inch long. This disease is transmissible to man, and all meat affected by it must be condemned. *Strongylus filaria*.—This nematode is found in the lungs of sheep and lambs, but is not a common affection in England. It is a slender worm, reddish brown in colour, and about an inch long. It causes during life much bronchial irritation and a husky cough.

(3) *Anthrax*.—Malignant pustule, splenic apoplexy, or splenic fever was the cause of thirteen deaths of human beings in England during 1895—eleven males between the ages of 10 and 65, and two females between the ages of 15 and 45. This disease is uncommon, but at the same time rapidly fatal in all animals. The chief signs are:—enlargement and congestion of the liver, spleen, kidneys, and lymphatics; the spleen is especially large, soft and dark. Extravasations of blood are not infrequent. The bacillus of anthrax being pathogenic, and the spores very hard to destroy, it is absolutely essential that the flesh of animals suffering from this disease should be destroyed by fire.

(4) *Actinomycosis*.—Ray-fungus, although not very common in this country, is found in Norfolk and other parts. It is known by the names of "wooden tongue," "lumpy jaw," and chiefly affects oxen. It is generally found about the head and neck of the animal, and in most cases one side of the tongue and one ramus of the jaw are affected. Hence its name. This fungus is pathogenic, and the spores are very resistent to heat, requiring, according to Wurtz, fourteen minutes' boiling to destroy safely. There is no separate return of deaths from this disease by the Registrar General, but I am of opinion that it is of much more frequent occurrence than is generally supposed. It is desirable that every medical man should examine carefully the pus of any abscess (he cannot otherwise explain) for granules about the size of a millet seed and of a canary yellow colour—those of the ray fungus.—(The paragraphs on Swine Fever and some other parts have been omitted.)—*Quarterly Medical Journal, July*, 1897.

19.—HEALTH RESORTS AND WATERS FOR THE ANÆMIC.

By Hermann Weber, M.D., F.R.C.P.,
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[The following is taken from Dr. Weber's paper:]

We will include those usually termed oligæmia, spanæmia, oligocythæmia, hydræmia, and chlorosis, and milder forms of so-called idiopathic or pernicious anæmia, all of which have in common impoverishment of blood associated with imperfect performance of the vital processes in different organs. In advising climates and waters for the anæmic, it is important to consider the circumstances under which the anæmia has arisen.

Summer resorts.—If we begin with summer resorts, our choice lies principally between the seacoast and more or less elevated localities, which we may, for convenience, call mountain resorts. Most of the low-lying inland places are not bracing enough for the anæmic, although there are considerable exceptions, especially in districts characterised by the presence of large forests, as the air in such districts (forest air) is more vivifying in consequence of the greater coolness during the day, the diminished dryness, the greater equability, and the chemical changes constantly going on in the surrounding air by the life processes of large masses of trees. In comparing seacoast with mountain resorts we find many instances in which both are almost equally useful to the same individual, while in many the one kind has decided advantages over the other. If a patient knows that he bears the seaside badly, that it causes headache, biliousness, loss of appetite, languor, and sleeplessness, and that the mountains agree well with him by improving his appetite, his sleep, and his mental and bodily energy, it is easy for us to decide; in other cases it is sometimes rather difficult. We have to bear in mind that at the seaside the temperature is more equable, the humidity greater, the air heavier and more condensed, and that it is more agitated by winds. Experience further shows that the seaside causes in many persons constipation and retardation in the excretion of used-up material, so that they are more in need of purgatives. With this influence of the sea air may be connected the peculiarity that delicate persons inclined to mental irritability, restlessness, and sleeplessness often find these defects aggravated at the seaside. At elevated regions, on the other hand, the air is drier, the temperature is lower, the differences between day and night and different days are greater, and also between sunshine and shade, the air is lighter and less condensed, and the movement of the air is slighter than at the seaside. Owing to the greater dryness and stillness of the air, the loss of body heat, in fairly sheltered

mountain localities, is less than at the seaside. Delicate persons, and especially those requiring mental repose, derive therefore mostly more benefit from mountains, while the seaside requires a greater power of resistance. Persons in whom anæmia is accompanied by considerable dilatation of the heart, either with or without valvular disease, ought not to be sent either to the high elevations or to the immediate seashore, but to moderately elevated regions (below 3,000 feet) with a fair amount of level or only gently rising ground.

(*a*) *Summer resorts at the seaside.*—The shores of Scotland and England are well provided with summer resorts, about the more southern of which carefully selected information is contained in "The Climates and Baths of Great Britain," edited by the Committee of the Royal Medical and Chirurgical Society (London: Macmillan & Co., 1895). The east coast is decidedly more bracing than the south-east coast, although Folkestone and Eastbourne have a fair share of bracing influences. Brighton, and the localities to the west of this town, can scarcely be recommended in summer to the anæmic when there is so good a choice of more bracing places further east. The localities further west are likewise on the whole decidedly less bracing than the east coast; but there are many anæmic persons who are more benefited by less exciting climates, and to such Hayling Island, on a branch line from Havant, Sandown, Freshwater, Alum Bay, Seaview, on the Isle of Wight, offer great advantages; and not less so Swanage in Dorset; or the Channel Islands (St. Heliers and St. Peter's Port); New Quay and Bude on the north-west of Cornwall; or Ilfracombe and Lynton in North Devon; Weston-super-Mare in Somerset; or Tenby, Aberystwyth, Penmaenmawr, and Llandudno on the coast of Wales; or Southport in Lancashire; or the Isle of Man; or Silloth, on the Solway Firth of Cumberland. The west coast of Scotland is rather too humid and rainy for the greater number of anæmic patients—at all events, when compared with the east coast—and the same remark applies to the majority of Irish seaside places; but they are often used with great advantage by the inhabitants of the island, especially by those who are free from rheumatism and have a tendency to bronchitic troubles. Portrush and Port Stewart are the most bracing of the Irish seaside places generally known. The north-west coast of France offers localities rather allied in character to the southern and south-western coasts of England, the similarity being caused by the same influence of the Atlantic currents; but the air at the French coast is rather more stimulating than the opposite coast of England. On the Belgian and Dutch coasts Ostend, Blankenberghe, and Scheveningen have a deservedly great reputation. On the German coast, including the Baltic, there are numerous small islands and coast places. In the selection of localities for

individual cases, it must not be forgotten that natural beauty of the place itself and the surrounding country is an important element of cure in most cases of anæmia; and further, that a moderate degree of amusement exercises a tonic influence on the brain and nervous system, and through this on the nutrition and sanguification. A similar action is to be attributed to genial society.

(*b*) *Summer resorts in the mountains.*—In the treatment of the anæmic the employment of mountain resorts is almost, though not quite, confined to the warmer months of the year, principally for the reason given above that the anæmic mostly cannot stand great cold. We have frequently heard it said that the anæmic do not improve on high elevations; but in our own experience they have often derived marked benefit provided the heart be not dilated and the arteries be sound. We are therefore justified in recommending to anæmics some of the high localities of Switzerland and the Tyrol. The Andes and Rocky Mountains contain many localities convenient especially to the inhabitants of North America; we will only point out Colorado Springs and Manitou in the Rocky Mountains. The same may be said of the highlands of South Africa for the inhabitants of the Cape Colony, and of the Himalayas and Nilgiris for the East Indies. Almost all the places mentioned are over 5,000 feet above sea level; only two or three are a few feet below. The majority of anæmics bear these elevations during summer well, provided they do not endeavour to climb, but restrict themselves to sitting in the open air, and moderate walking on even or slightly rising ground. As exceptions, already referred to however, are to be mentioned cases with considerable dilatation of the heart, with or without valvular disease; atheromatous conditions of the arteries, and complication with Bright's disease. In more intermediate elevations, viz., between 5,000 and 3,000 feet above sea level, we have many suitable places in Northern and Central Switzerland, on the Italian side of the Monte Rosa, in the Mont Blanc region, in the Central Tyrol, in the Southern Tyrol, and in the French Pyrenees. The climatic characters of these intermediate localities, as compared with the higher regions, are that the air is less dry, that the shade temperature is rather higher, that the rarefication of the air and the evaporating power are diminished. In their physiological and therapeutic effect they may be designated as somewhat less bracing, but experience shows that a greater number of anæmic invalids bear them better, sleep and walk better, and eat more. In the mountain resorts below 3,000 feet, the choice is very great. Some prominent places are to be found in the Tyrol, in the Bavarian Highlands, in Eastern Switzerland, in Central Switzerland, near the Lake of Geneva, in Savoy, in the Auvergne, in the Pyrenees, in the Vosges Mountains, in the

mountain ranges of Bohemia, in the Black Forest, in the Harz Mountains, in the Thuringian Forest, and further east in the Erz and Riesengeberge.

Many of these localities, whose number might be greatly enlarged, especially those in Northern Germany, are more bracing than would correspond to their actual elevation above sea level, partly on account of their more northern position, partly because they are not surrounded by high mountains, and are thus more exposed to the air from all sides. Still more bracing, compared with Continental resorts of similar elevation, are many localities in Great Britain, including Wales and Scotland.—*The Practitioner, August*, 1897.

DISEASES OF THE NERVOUS SYSTEM.

20.—CEREBRAL LOCALISATION.

By Dr. STODDART.

This author reviews seriatim the various symptoms of intracranial lesions, and explains their significance.

1. *Mental symptoms.*—Practically of little localising value. Roughly, disease of the frontal lobes causes loss of memory and moral deterioration, while disease of posterior third of the hemispheres is liable to cause mental symptoms not unlike general paralysis.

2. (*a*) *Persistent headache.*—Situation of headache is of little localising value. Intense frontal headache may be due to cerebellar tumour, and generally on opposite side. In headache at nape of neck tumour is probably sub-tentorial. (*b*) *Cephalic tenderness.*—If tenderness only on firm pressure or percussion, the tumour is in membranes and somewhere near tender spot. If tenderness is superficial the tumour is in brain substance; cerebral tumours cause tenderness of scalp, cerebellar tumours tenderness of face.

3. *Fits.*—Fits of an epileptiform or Jacksonian type are of utmost value in determining situation of lesion. Ordinary epileptic fits begin usually with loss of consciousness; epileptiform never, but often with some local subjective phenomenon, such as (*a*) seeing complicated pictures (angular gyrus), (*b*) ringing of bells (superior temporo-sphenoidal), (*c*) metallic taste (hippocampus major). If with movement, then different cortical centres round fissure of Rolando.

4. *Cranial nerves.*—(i.) Loss of sense of smell usually due to pressure on olfactory tracts—*e.g.*, tumour in frontal lobes; said, also, to be lost in some cases of cerebellar disease. (ii.) *a.* Optic

neuritis, localising value small. Most intense where tumour is in cerebellum or occipital lobes. *b*. Complete blindness, due to intracranial mischief (apart from optic neuritis and atrophy); due to a lesion either at optic chiasma or splenium of corpus callosum. *c*. Hemianopia is due to lesion somewhere between optic chiasma and occipital lobe of one side, or in either of these two places. Hemianopia due to lesion of optic radiations is associated with hemianæsthesia, while that due to lesion in occipital lobes is not. A tumour near to external geniculate body may be diagnosed if hemianopia is associated with ophthalmoplegia of opposite side (pressure on crus). Lesions of chiasma cause irregular forms of hemianopia. (iii.) A lesion of third nerve causes paralysis of levator palpebræ and internal, superior, and inferior recti, as well as inferior oblique (ptosis, divergent strabismus, inability to turn eye upward, downward, or inward, diplopia), and also of sphincter iridis and ciliary muscle (dilated pupil, palsy of accommodation). Diagnosis between lesion of trunk of nerve and lesion of nucleus. The inner or palpebral fibres of orbicularis palpebrarum are supplied by nerve fibres which arise in nucleus of third and emerge with fibres of facial; hence a lesion of neucleus causes diminished power of closing eyes naturally. Fourth.—Diplopia homonymous. Sixth —Paralysis of external rectus (convergent squint). Diagnosis between lesion of trunk and of nucleus. A lesion of sixth nucleus in pons causes not only weakness in external rectus of same side, but weakness of internal rectus of opposite side (proximity of third and sixth fibres in posterior longitudinal bundle), *i.e.*, impaired power of looking to same side. Both nuclei often involved, then patient only able to look upwards and downwards, but not to either side. Fifth Nerve.—On motor side paresis of muscles of mastication, and on sensory side loss of sensation of face and scalp in front of coronal line joining two ears. Anæsthesia of nasal cavities and of mouth as far back as tonsils and soft palate, and loss of taste for front of tongue. If the mouth be opened widely, jaw deviates to paralysed side. Seventh Nerve.—Paralysis of facial trunk causes inability to raise forehead on same side, inability to frown on that side, to close eye, or raise upper lip. Paralysis of facial due to cerebral lesion is limited to lower part of face, and only noticeable in inequality of naso-labial folds. The facial is accompanied by some fibres from hypoglossal nucleus to supply orbicularis oris, hence, if lesion is limited to cells of facial nucleus, inner fibres of orbicularis oris would not be paralysed, and patient could whistle. Eighth Nerve.—The question as to whether lesion is in auditory centre, nerve or nucleus, is decided by other associated conditions. Ninth Nerve.—Glosso-pharyngeal supplies sensation of pharynx and back of tongue. If both involved, feeding tube must be used. Twelfth Nerve.—The tongue may be paralysed on one side from

involvement of tongue centre or hypoglossal nucleus or nerve. In any case when protruded it deviates to paralysed side. If the palsy be cerebral, there is no wasting.

5. Absolute hemianæsthesia almost certainly means involvement of posterior end of internal capsule, and diagnosis is absolutely certain if associated with hemianopia.

6. *Knee-jerks.*—Stoddart gives the following clinical rule, by no means constant:—That the knee-jerk is diminished or lost in irritative lesions of the cerebrum and paralytic lesions of the cerebellum, and it is increased in paralytic lesions of the cerebrum and irritative lesions of the cerebellum.

7. *Anæsthesia* due to disease of cortex is but slight. Lesions in cortical area of parietal lobe give rise to loss of sense of position. Test sense of position immediately after an epileptiform attack; if sense of position improves after an hour or so, lesion is either subcortical or supracortical; if not, it is cortical. *Corpus Callosum.*—Suspect a lesion of corpus callosum if unilateral fits are associated with hemiplegia of opposite side. *Lenticular Nucleus.*—Lesions here may cause rise of temperature. *Optic Thalamus.*—Mobile spasm of one side with hemiplegia of opposite side. *Corpora Quadrigemina.*—Ophthalmoplegia and staggering gait with increased knee-jerks. *Crus Cerebri.*—Third nerve, paralysis of one side with hemiplegia of other side. *Pons.*—Paralysis of fifth, sixth, seventh, and eighth nerves of one side with hemiplegia of other. *Medulla.*—Paralysis of ninth, tenth, eleventh, and twelfth nerves of one side with hemiplegia of other. *Cerebellum.*—Lesion of anterior part of middle lobe causes patient to fall forward, while one in posterior part causes patient to fall backward; nystagmus, rotatory or oblique, more marked on same side as lesion; weakness of back muscles. If in lateral lobe, tendency to rotate to side of lesion; if in superior peduncle, most marked in head and trunk; if in middle peduncle, more marked in trunk; if in inferior peduncle, rigid extension of the limbs of same side with flexiom of opposite side; knee-jerk usually diminished on side of lesion.—*Dr. Grant Andrew's abstract in the Glasgow Medical Journal, September,* 1897.

21.—ON THE CAUSES OF NERVOUS DISEASES IN CHILDHOOD.

By Dr. Julius Zappart.

The various etiological factors may be grouped under the four heads:—Injury, toxines, heredity, and psychical influences. The peripheral nerves may be damaged by abnormal positions of the fœtus in utero resulting from an injury to the mother.

Hence many forms of clubfoot. Bell's paralysis from forceps pressure is not infrequent. The lower extremities are rarely injured during birth, but the brachial nerve roots may be compressed by the forceps or the finger of the accoucheur, and Erb's paralysis may result. Purulent otitis may cause facial paralysis in childhood as in other periods of life. Pressure-paralysis of the musculo-spiral is so rare as to be comparable in frequency of occurrence with paralysis of the ulnar from resection of the elbow joint. Primary polyneuritis is very rare. Secondary neuritis, chiefly in the form of post-diphtheritic paralysis is, on the contrary, common. Scarlet fever, pertussis, and measles are said to cause peripheral neuritis, and the author has seen one case which occurred after varicella. Pain in the bones in syphilis and rickets may give rise to a pseudo-paralysis. Rickety children may suffer from catalepsy, and are subject to laryngo-spasm tetany, and spasmus nutans. Paralysis from lead, arsenic, or alcohol is not likely to occur, though even delirium tremens has been met with in childhood. Family anomalies in the eye and other muscle groups have been recorded. Moebius found absence of the nuclear cells of the oculomotor nerves in blood relations. Many varieties of spasm, for example, blepharospasm, are family affections. Trophic disorders, causing atrophy or hypertrophy of one side of the face or body, may be congenital. The spinal cord is exposed to injury during labour, and hemorrhage into the grey matter or central canal may occur. Some cases of syringomyelia have been connected with injuries during birth. Children are not very liable to injury of the cord. The most frequent cause of paraplegia is of course spinal caries. The most important toxic disease is infantile paralysis, acute primary poliomyelitis being regarded as an infectious disease. There may be a post-diphtheritic or post-scarlatinal polio-myelitis. Tabes dorsalis may be met with in syphilitic children. Hereditary ataxia and paralysis are of exceptional interest. In addition to Friedreich's disease we have a cerebellar type of hereditary ataxy, in which the knee-jerks are exaggerated, the gait reeling, the pupil re-action absent, and there may be in addition optic atrophy. In the spinal type of hereditary paralysis there may be a spastic gait with exaggerated knee-jerks, whilst the arms are unaffected. In a case of Strümpfell's the grandfather, the father, and two uncles were similarly affected. The spastic limbs, the mental failure and nystagmus that is observed in the fourth or fifth month and that result from developmental arrest of the brain, are not to be confused with the cerebral birth palsy, sometimes affecting several children of the same family, but really depending on a narrow pelvis. Of muscular atrophies we have three types—the progressive spinal muscular atrophy of Aran Duchenne, progressive neural muscular atrophy, and primary muscular atrophy. Progressive neural muscular atrophy

begins with atrophy of the muscles of the leg; there may be sensory disorders. The disease is said to be primary in the nerves and secondary in the cord. Of primary muscular atrophies we have pseudo-hypertrophic paralysis, Erb's juvenile type, and the so-called Landowny-Dejerine type in which the atrophy begins in the muscles of the face and spreads to the shoulder girdle muscles next. Whilst trismus neonatorum is undoubtedly due to the tetanus bacillus, it is still an open question whether tetanie is a symptom of rickets or due to toxines. The yearly curve showing a regular increase in March is in favour of the latter view. The prevalence of chorea in April and May, and the association of endo-carditis with the cerebral disorder point to the hæmatogenous origin of St. Vitus's dance. Migraine is probably the most frequent of the hereditary diseases from which children suffer. The characteristic headache and other symptoms may begin as early as the fourth or fifth year. With regard to headache in general, it is well to examine the eyes, the ears, the nose, and to think of dyspepsia, febrile causes, anæmia, and, lastly, brain lesions. The sight affection is likely to be hypermetropia. Acute catarrh of the middle ear may in young children produce some of the symptoms of meningitis. Adenoid vegetation and nasal catarrh may cause supra-orbital neuralgia and reflex neurosis. Children of neurotic parents may exhibit nervous symptoms which may be arranged in two groups. In the first division there may be good intelligence, a quick up-take with a tendency to emotional irritability; the appetite may be capricious, headache may be complained of, and there may be restlessness, tremors, and stammering. In the second group there may be all grades from slight mental defect to downright idiocy. In addition there may be, more or less, normal insanity. A careful examination of such neuropathic children will probably show deformities of the skull or facial asymmetry, or a slight degree of ptosis, nystagmus, strabismus. In both groups there may be a tendency to masturbation. Traumatic neuroses are specially apt to occur in children with bad family history. Hysteria and Pavor nocturnus may be thus explained. It is doubtful whether typical neurasthenia has ever been observed in childhood; imitation diseases are frequent. Enuresis nocturna may be associated with imbecility, it may be a symptom of nocturnal epilepsy, or it may depend on purely psychical factors that are amenable to treatment. Convulsions in children may be caused by high fever, bowel disorders, or rickets. Epilepsy may be a symptom of infantile cerebral paralysis, or it may be of the so-called genuine or idiopathic type. In the latter there can be no doubt about the *rôle* heredity plays. Many cases which are only recognised at puberty, have had during childhood attacks of *petit mal* with such symptoms as teeth-grinding, incontinence of urine, and

laryngeal spasm. Epilepsy may be caused by injury even when there is no hemiplegia or any other evidence than the fits of a damaged cerebral cortex. Injuries during birth are recognised to be frequent causes of cerebral infantile palsy. Cases of spastic paraplegia observed in infants of premature birth are ingeniously explained by supposing that the pyramidal tract which does not extend below the cervical cord in the seventh lunar month is not sufficiently developed to meet the strain which the unfavourable condition of extra-uterine life throws upon it. A blow on the abdomen of the mother has been known to cause cerebral palsy in the child. Many cases date from an acute febrile disease with marked cerebral symptoms such as convulsions, stiffness of the neck, loss of consciousness, &c. Whether there is a primary polio-encephalitis in such cases it is difficult to say. Numerous instances of hemiplegia in children following scarlet fever, measles, and other infectious diseases have been recorded. Cerebral hemorrhage is very rare in childhood. Meningeal hemorrhage has been noticed after scarlet fever and pertussis; embolism is said also to be very rare. Syphilitic disease of vessels may cause Jacksonian epilepsy, but probably hemiplegia in children is not so often associated with hereditary syphilis as it is generally supposed to be. Progressive paralysis is always due to syphilis; congenital hydrocephalus has been lately connected with the same disease. It is needless to say how frequently cerebral abscesses are caused by injury and suppuration of the ear and nose. Multiple abscesses have been observed in connection with purulent bronchitis as well as in pyæmia from other sources. Traumatic suppurative meningitis is as likely as traumatic cerebral abscess. The connection between injury and tubercular meningitis is doubtful, but that there may be some connection is shown by tubercular caries following injury to bone; infection, however, plays a more important part than injury in the etiology of meningitis. According to Steffan, simple meningitis may be associated with bowel diseases. We know that typhoid bacilli and pneumococci may set up a suppurative meningitis, in association with typhoid fever and pneumonia, epidemic and tubercular cerebro-spinal meningitis and tubercular are sufficiently recognised; of the chronic forms a circumscribed disseminated meningitis depending on congenital syphilis is described. The etiology of multiple cerebral and spinal sclerosis in childhood is very uncertain, probably it is a sequela of infectious diseases. Marie contests this view, and, according to Ziegler, congenital abnormality is an important factor.—(*Wien. Med. Woch.*, 1897, *Nos.* 20, 21, *and* 22).—*Abstract in Quarterly Medical Journal, July,* 1897.

22.—THE TREATMENT OF CEREBRAL HEMORRHAGE.

By Byrom Bramwell, M.D., F.R.C.P. Edin., F.R.S. Edin., Physician to the Royal Infirmary, Edinburgh.

[The following is taken from Dr. Bramwell's paper. See also "Synopsis."]

At the commencement of an attack of cerebral hemorrhage the first indication for treatment is to try and arrest the bleeding and limit the extravasation. We try to carry this indication into effect by employing measures calculated to lessen the activity of the cerebral circulation. The head and shoulders should be raised rather than lowered, an ice-bag should be applied to the head, warmth applied to the feet with the object of dilating the peripheral vessels, leeches may be applied behind the ear, and a drop or two of croton oil administered with the object of producing a brisk watery evacuation. Venesection, bleeding from the temporal artery, compression of the common carotid artery, and ligaturing the carotid artery on the side of the hemorrhage, are other methods which have been recommended. The value of bleeding (either from a vein or the temporal artery) has been much debated; for my own part I believe it to be useful and especially indicated in those cases in which the face, head, and neck are turgid, the pulse hard, full and slow, and the left ventricle hypertrophied. Bleeding is contra-indicated in those cases in which the pulse is feeble, rapid, or irregular, the heart dilated or weak, and the patient very old or debilitated. I have no experience of compression of the carotid, or of ligaturing the carotid, a method of treatment which has been recommended by Professor Victor Horsley. A brisk watery purge acts in very much the same way as a moderate bleeding, but for the production of a brisk watery purge time is required. Consequently in many cases venesection is preferable. In those cases in which the advisability of bleeding is doubtful, a drop or two of croton oil and an enema may be administered. The common practice of applying a blister to the nape of the neck is of doubtful advantage. It is extremely doubtful if at this stage of the attack counter-irritation does any good. In the severe cases it is useless, and in the slight cases in which the coma is speedily recovered from it is unnecessary (even if it were beneficial) and it may be a source of discomfort to the patient. If a blister is to be applied at all it is probably best applied to the shaved scalp between the ears (*i.e.*, over the top of the head). The ice-bag, which I consider of far more importance, may be applied over the top of the blister. If there is retention of urine, the bladder should be emptied by the catheter at regular intervals. If there is incontinence, the nurse should see that the patient is kept dry

and clean; this is a most important point, for the development of a bedsore is one of the chief dangers in cases which do not prove immediately fatal. It is doubtful if any internal remedies have much influence in arresting the bleeding. Ergot has been recommended for this purpose. Nitrite of amyl, or nitrite of sodium, is perhaps useful in some cases in which the pulse is hard and tense, but venesection is probably a better remedy. Aconite has also been recommended in those cases in which the pulse is full and bounding. In those cases in which the coma is gradually becoming deeper and deeper, the pulse (though perhaps full and bounding or hard) slower and slower, the respiration more and more affected, in cases, in short, in which the intracranial pressure is evidently steadily increasing as the result of a gradually increasing hemorrhage, the advisability of trephining and tapping the hemorrhagic cavity and so preventing rupture into the lateral ventricles—an event which is certainly and rapidly fatal—should be considered. Such cases are comparatively rarely met with.

The second indication is to attend to the condition of the bladder, and to take means to prevent if possible the formation of a bed-sore. The patient should be placed at once, or as soon as he can be moved without risk, upon a water-bed. Care must be taken, too, that the hot bottles which are applied to the feet are not too hot. Owing to the comatose or semi-comatose condition, the patient will not of course make any complaint (the nurse has, under such circumstances, to feel for him), and owing to the diminished trophic resistance of the skin, a degree of heat which would not be prejudicial to a healthy person may easily blister and burn the skin of a patient suffering from cerebral hemorrhage.

The third indication is to sustain the vital powers by appropriate feeding, and, if necessary, by the administration of cardiac tonics and stimulants. It is important to avoid giving anything which is likely to produce vomiting, for the straining which attends the act of vomiting may re-open the ruptured vessel, or, if the bleeding is still going on, increase it. For the same reason, stimulants should be withheld, unless they are absolutely required. If the heart is failing, and the pulse rapidly running down, stimulants must of course be administered even at the risk of increasing or re-exciting the hemorrhage. During the comatose state the administration of food and liquids by the mouth requires to be conducted with great care and caution. A nutrient enema may be given every four hours, and if necessary it may be supplemented every now and again by a nutrient suppository. It is unnecessary to say that in those cases in which the sphincters are relaxed rectal feeding cannot be satisfactorily carried out. During the stage of coma, mucus, saliva, &c., are apt to accumulate in the mouth and pharynx, and to add

to the difficulty of the respiration and the tendency to death from asphyxia; for it must be remembered that in some cases the patient dies during the stage of coma from failure of the heart's action, in others from asphyxia and failure of the respiration, in others from the two conditions combined. In others, again, death is preceded or attended by hyperpyrexia.

By attention to position (turning the patient on his side, turning the head to one side, &c.), it is in many cases possible to avoid the accumulation of mucus, &c., at the back of the throat, and so to diminish the risk of asphyxia. The relief is, however, in most cases merely temporary. In cases of cerebral hemorrhage in which these conditions are developed the result is almost always fatal. It is very different when we are dealing with the status epilepticus. In that condition I have undoubtedly in more than one case, by preventing the accumulation of mucus, saliva, &c., in the back of the throat, and so preventing asphyxia, saved the life of the patient.

Provided that the patient can swallow, a teaspoonful or two of milk may from time to time be given by the mouth, but once the bowels have been thoroughly well opened, it is better to feed the patient by the rectum. If there is difficulty in swallowing, if the administration of fluids by the mouth produces coughing or choking, the feeding should be entirely rectal. Alcoholic stimulants, digitalis, &c., may be given by the same channel, or strychnine (a drop or two of the liquor every two hours) may be administered hypodermically, the effect being of course carefully watched. Possibly in some cases in which the respiration is much embarrassed and death from asphyxia seems imminent, oxygen inhalations might be beneficial. The main objects of treatment during the first stage of cerebral hemorrhage are, then, to arrest the bleeding and to tide the patient through the stage of coma. If the patient recovers from the stage of coma, our next object is to prevent and allay the secondary cerebritis. As the patient recovers from the coma absolute rest should be enjoined. A little liquid food (milk) and water may be given by the mouth; the rectal feeding may be still continued; great attention must still be directed to the condition of the bladder and rectum and to the prevention of bedsores. At this stage of the case, I usually commence the administration of iodide of potassium—5 grains three times daily. When symptoms indicative of secondary cerebritis (a rise in temperature, headache, muscular twitchings, rambling, a return of the coma, &c.) develop, a brisk purge may be again administered, cold (an ice-bag) re-applied to the head, and bromide of potassium or a combination of bromide of potassium and chloral hydrate given in addition to the iodide. If, during the stage of secondary cerebritis, the

pulse becomes very quick, feeble, or intermittent, cardiac stimulants—digitalis, strophanthus, strychnine, &c., must be given; alcohol is probably better avoided. If the pulse tension is high the administration of remedies which depress the force and violence of the heart's action, such as aconite or nitrite of sodium, may perhaps be employed with advantage in some cases in addition to purgation. As the symptoms of secondary cerebritis subside, the bromide of potassium and chloral hydrate should be discontinued. After the symptoms indicative of secondary cerebritis pass off, complete rest must still be enjoined until the acute changes round the clot have subsided. The iodide of potassium, with perhaps a small dose of carbonate of ammonium, or tincture of nux vomica, should be continued. During this, the early, stage of convalescence the patient must be carefully fed, the condition of the bladder and rectum attended to, and any cystitis or bedsores which may have developed treated. At this stage of the case gentle massage is useful. Faradism of the paralysed muscles, strychnine and too active attempts at voluntary movement of the paralysed parts, all of which may be most useful a little later, should be avoided, or if employed, administered with great caution. Some authorities recommend the application of the constant electric current to the head—one pole being placed just above either mastoid process. The constant current, by its catalytic action, is supposed to aid the absorption of the inflammatory products and to promote the nutrition and restoration of the damaged nerve elements. It is very doubtful if electricity applied in this way is of any real use. If it is employed the greatest care should be taken to use a weak current, and the effects which the current produces on the patient should be carefully watched. In severe cases of hemiplegia the tendency to the development of contractures should be remembered, and passive movements (more especially of the fingers, wrist, and elbows, for it is at these parts that the contractures are most apt to be developed) carefully and diligently practised.

When there is reason to suppose that the acute changes have subsided, *i.e.*, at the end of six weeks or two months, the treatment appropriate for an ordinary case of chronic hemiplegia may be employed. A more liberal dietary may be allowed; the patient should be encouraged to practise systematic voluntary movements; general tonics, such as quinine and small doses of strychnine, may be given internally, and massage and electricity judiciously and cautiously applied to the paralysed muscles. It is difficult, I think, to over-estimate the value of frequently repeated and systematic voluntary efforts in cases of hemiplegia, and indeed in all forms of paralysis.

The treatment (amount of exercise, &c.) must of course be

carefully and judiciously regulated in accordance with the conditions which are present in each individual patient (the severity of the paralysis, &c.), the state of the heart, arteries, kidneys, &c., being taken into account. If the exaggerated myotatic irritability (spastic condition, exaggerated reflex action), which is usually developed, is excessive, dilute hydrobromic acid, bromide of potassium, &c., may be administered; in these cases strychnine, nux vomica, and the faradic current are usually better avoided. It is in those cases in which the muscular atrophy is considerable that electricity and strychnine are most useful. In many cases in which muscular atrophy and myotatic irritability are combined a combination of dilute hydro-bromic acid or bromide of potassium with strychnine or nux vomica, is, I think, useful.—*Treatment, July* 8, 1897.

23.—A STATISTICAL STUDY IN EPILEPSY.

By L. Pierce Clark, M.D.,
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In a careful study of 9,545 seizures which occurred in 150 cases of epilepsy admitted to the Craig Colony during the past year, considerable attention was devoted toward ascertaining whether the attacks occurred in periods; but the results showed that there was no periodic recurrence of seizures which could be at all definitely predicted from time to time. These observations are contrary to the experience of some investigators in epilepsy, who maintain that the malady is as much a regularly periodic disease as it is a convulsive one. It has been frequently stated by neurologists that the generative functions are in close connection with the higher cerebral centres, and in most mental diseases, as well as in many convulsive ones, the organs of generation are diseased, which disorder is very often regarded as a cause of the nervous disease or figures prominently as a result of it. During the year's study upon the female epileptics at the Craig Colony, it was noticed that, although at the time of their admission many patients (and very frequently their friends) stated that the seizures appeared regularly at the menstrual period, yet this was not borne out by observation of such cases after admission. For several months the convulsions, in a very few cases, appeared three or four days before and after the menstruation began, but when such patients had become

thoroughly accustomed to colony life the apparent association disappeared. The greater number of the female patients were remarkably free from genito-urinary disorders. When we take into account the fact that epilepsy is a disease which often makes its first appearance during the night, and may exist for years as such, we would naturally infer that the greater number of attacks occur at night ; but the records kept at the colony show that the greater number of attacks occur during the day rather than by night, being in the ratio of five to four. This may be accounted for in a measure by the fact that the treatment in the majority of cases was a bromide-chloral one, and chloral, when given at night, is a well-known remedy which throws nocturnal seizures into diurnal attacks. A plausible explanation for this fact rests upon the physiological action of the two drugs. The ultimate effects obtained from bromide and chloral are about the same. The effects of bromide are much longer felt but are less slowly produced when compared with those of chloral. Both drugs probably have their main action upon the circulation. Obviously, for rapid effect, chloral would have the advantage over bromide. As morning approaches, after a night dose of chloral the unstable nervous centres approximate the condition of a fulminant, but receive a check by a relatively weaker drug which proves impotent to prevent the explosion of nervous substance. Consequently a seizure which would have occurred at night is, with chloral treatment, tided over until the morning or the following day. The hour of the day (twenty-four hours) in which the greatest number of epileptic attacks occur has been differently stated by neurologists. Some have said that they occur with greater frequency in the early morning hours, between eight and ten o'clock. Féré has stated that practically no attacks occur between the hours of eleven and twelve o'clock in the forenoon. In a study of 1,985 attacks, he found but three occurring at this hour. That this statement is not in accord with statistics at the Craig Colony may readily be seen by reference to the appended table of the record of nearly ten thousand seizures, which have been tabulated by each hour in the twenty-four during each month from March, 1896, to January 1, 1897—a period of ten months. The time of occurrence of each attack in the twenty-four hours, its duration, and its character are a part of the permanent record of each case at the colony. This table shows that 378 attacks occurred between eleven and twelve o'clock, making this hour rank sixteenth in the order of frequency of the whole number for the twenty-four hours. It will be seen that the number of attacks at this hour is only twenty below the average. The greatest number of attacks have been found to occur at the hour of four o'clock in the morning ; the least number at seven o'clock at night.

Table showing 9,545 Epileptic Seizures, arranged to show the number of attacks which occurred in each hour during the day for a period of ten months.

1	a.m.	353	13	p.m.	412
2		411	14		443
3		433	15		424
4		537	16		337
5		453	17		341
6		498	18		253
7		392	19		224
8		339	20		344
9		355	21		455
10		420	22		485
11		378	23		394
12	noon	435	24		429
				Total	9,545

The diet for epileptics has been so arranged that the heaviest meal of the day occurs at noon, and the progress of stomachic digestion of food is probably complete in two hours. Then we have a decided remission in the frequency of attacks, that continues until the nine o'clock hour, when they once more occur frequently. Nevertheless we should be guarded in accepting this explanation as an adequate one to settle the question, as the antithetical idea has been used to explain the supposed great infrequency of attacks occurring at the eleven o'clock hour, which we have found to have little or no basis in fact. Aside from the auto-intoxicant theory for convulsive disorders, which has been and is still being so assiduously urged by Haig and Bouchard, the epileptic is still known to be a person incapable of receiving any sudden excessive or otherwise abnormal impression anywhere throughout the whole organism, and especially in the alimentary tract. This is well exemplified by the fact that nearly one-half of the patients admitted to Craig Colony suffer from more or less severe constipation. The reception of food and its assimilation is one of the very primitive habits of life, yet any abnormal departure from its regular and methodical processes cannot but act disastrously to the whole organism. The recognition of this fact has led to the present careful consideration of the dietary for epileptics. From a simple methodical principle, any abnormal departure in diet would act as a fulminant to the unstable nervous centres in the epileptic's cerebral cortex.

In drawing any conclusion in regard to the cause for seizures appearing more frequently at one time than at another, we should consider the metabolism of the whole organism and its influence reflexly upon the nervous system. This undoubtedly is the first and greatest factor which should be studied in order to solve the question of the frequency of attacks at certain hours

during the day. As for the greatest number of attacks occurring at 4 a.m., two reasons may be given to explain the great frequency of the phenomenon. It is one of the sleeping hours when the epilepsy is farthest away from the sedative action of the chloral and bromide, as the patient generally awakens some time during the eight-o'clock hour. Again, the night spent in sleep is well known to be a time when reflex activity runs riot in the organism. All the vital forces are at their lowest ebb at 4 a.m., and, above all, the nervous system is especially defenceless and open to the reception of reflex action. There are undoubtedly many other factors operative in certain cases of epilepsy besides reflex and digestive disturbances.—*Medical Record, July* 31, 1897.

24.—REMARKS ON THE RECENT TREATMENT OF EPILEPSY.

By Ernest Septimus Reynolds, M.D. (Lond.), F.R.C.P.,
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[The following is taken from Dr. Reynolds' second paper on this subject:]

Bromides in combination.—It is well known that sometimes the combination of some drug, such as digitalis or belladonna with the bromides, acts better than the bromides alone. In recent years several new combinations have been advocated. Thus antipyrine with ammonium bromide, first suggested by H. C. Wood, has been tried in forty-three cases by Potts with marked relief in every case. Hay also tried the combination in thirty most hopeless cases. In some of these, the convulsion rate was unaffected, but as a rule the attacks were lessened, even when bromides alone had been useless. Alexander gives 20 grains of borax with 5 grains of bromide of soda three or four times a day. He found that the borax alone did not give good results, whereas with the combination in nine patients the fits were arrested for several months, in seventeen diminished in frequency, and in one were not affected. Bechterew, assuming that during the epileptic fit there is an active cerebral hyperæmia, recommends a vaso-constrictor in combination with the bromides. For this purpose he prefers adonis vernalis, as it does not accumulate so much as digitalis. Lui used the same method with success, but other observers affirm that the good results are due entirely to the bromide in the combination. The most recently proposed combination treatment is the opium and bromide method of Flechzig. He recommends that small but

increasing doses of opium should be given for six weeks; this should then be suddenly discontinued, and large doses of bromide, about 120 grains per day, be substituted. After continuing these large doses for two or three months, the amount is lessened gradually to about 30 grains daily. Flechzig, in a recent article, has warned practitioners that this treatment should never be tried until the ordinary bromide treatment has been proved to be of no service; secondly, that the patients should be kept in bed under the closest observation the whole time, and thirdly, that it is only to be used with inveterate cases of epilepsy especially where mental symptoms are present. The method is not adapted to general practice, and should be used only as a *dernier ressort*, and with the greatest care. Collins has reported twenty cases treated by this method, all of which were benefited. He gave 1 grain of opium per day, increased to 15 grains per day at the end of the first week, and this was kept up for six weeks. This was then suddenly stopped, and 30 grains of potassium bromide three times a day substituted; this was continued for two months, and then lessened to 40 grains per day. Other observers have reported on the method and have generally had very favourable results.

Drugs other than Bromides.—During the past ten years many new drugs have been recommended for the treatment of epilepsy. Testicular juice was recommended by Brown-Séquard, but Bourneville and Cornet, giving the extract a thorough trial in twenty-eight cases, report that in only eight was there noticed a slight diminution of the attacks, while in twenty there was a decided increase of them, and in no case was there any mental improvement. Féré reported equally unfavourably. Babes reported cures from the injection of extract of nerve substance, but this needs confirmation by others. Antefebrine has been tried by many, and when given in large doses a slight diminution in the number of fits has been noticed, but the results are not sufficiently brilliant to make the risk of poisoning worth running. Similarly antipyrine and phenacetine have been tried, but generally with no benefit beyond a slight lessening of the number of fits, though McCall Anderson records a case in which a boy had no return of fits so long as he was taking 25 grains of antipyrine a day. Bokenham also tried antipyrine in twenty cases with marked relief in the majority; but Fraty, giving it in doses of from 40 to 120 grains daily, says that its moderate effect is transitory, and that the attacks are more violent than ever after the drug has been stopped. It is obvious then that antipyrine has not the effect of the bromides, and moreover its continued use in such large doses is by no means safe. Amylene hydrate was recommended by Wildermuth, especially in cases where the attacks rapidly followed one another, when there was marked bromism and in nocturnal epilepsy. Doses of thirty ℥

of a 10 per cent. solution, increased up to 120 ♏ were given. After prolonged use great somnolence set in. Umpfenbach had two successful cases (so long as the drug was continued), one case improved, but six with no improvement. Sulphonal is said by Hinsdale to be of some service when bromides cannot be continued, and Bannatyne considers that in doses of 10 to 40 grains at bed time it suppresses the fits. Here again is a drug of less power than the bromides, and liable to produce serious symptoms or even death if its use be long continued. Paraldehyde was used in nine cases by Diller for four months, the attacks being lessened from 25 to 75 per cent. After this time the effects, however, were disappointing. Borax, a drug first recommended in 1870 by Gowers for inveterate epilepsy (uninfluenced by bromides), given in doses of 15 to 30 grains after food three times a day, has been revived of late years. Stewart thinks it especially useful in nocturnal epilepsy. Dijoud tried it in twenty-five cases in which other treatment had failed; the duration of the treatment was four to seven months, the daily doses varying from 15 to 90 grains; one of his cases was entirely cured and eighteen were relieved. Mairet treated thirty-one cases for over twelve months. In five of them there was no improvement, in four the treatment had to be stopped. In the remaining twenty-two there was a marked improvement, the fits being reduced from thirteen to three per month on the average. This was a better result than bromides had previously given with the same cases. The dose should be 10 to 15 grains per day, gradually increased to 40 grains per day. He gave the drug as far as possible from meal times, and disguised the nauseous taste with syrup of orange. Alexander agrees with Gowers, however, that it should be given after food. But there may be many bad effects from the administration of borax. These are nausea, salivation, loss of appetite, vomiting and diarrhœa, loss of weight, œdema of the face and extremities, papular eruptions near the joints with pruritus and occasional eczema, scarlatiniform eruptions followed by desquamation, slight conjunctivitis, falling out of the hair, and affection of the nails. Lemoine says the gums may become swollen and tender and surrounded by a greyish blue line. Féré remarks, in addition, that the urine may be loaded with albumen which may not disappear when the drug is stopped. The drug has, however, no effect on the intellect, and with careful feeding, fresh air and tonics, such as quinine and iron, some of the bad effects may be lessened. Gowers states that small doses of arsenic prevent any bad effects on the skin, but other authors state that arsenic does not act here as it does with the bromides. It thus would seem that though the careful administration of borax may be useful if bromides fail, yet it is a drug which will not displace the general use of the bromides.

Dietary.—Gowers mentions that "it has been recommended, on theoretical grounds, that the diet of epileptics should contain little or no animal food. The evidence of experience, as far as I have seen, is opposed to this opinion. I have known the exclusion of meat from diet to cause a great increase in the severity of the fits, which became slighter when meat was again given, and I believe that patients do best if a moderate quantity of animal food is given twice a day, care being taken to avoid that which is indigestible." This definite opinion from such a high authority must be considered of the greatest weight, and is supported by Hammond, who says that no absolute rule can be laid down, except that the stomach must not be overloaded, and in severe cases only small quantities of a mixed diet should be given. On the other hand, Short has found that the average number of fits was less when only small amounts of animal food were taken, and Merson, from a careful series of observations on a selected number of cases, found that when put on a nitrogenous diet after being on a farinaceous diet many of the patients became more dull and stupid, but again changed for the better as soon as farinaceous food was resumed. Out of twenty-four cases there was in fourteen a decided decrease in the number of fits during the period of farinaceous diet, 10·7 compared with 28·3. In the remaining ten cases the kind of diet seemed to have no influence.

We must, in the first instance, make a thorough trial of the usual routine treatment by bromides, continued for a sufficiently long period. If this is not successful then bromides in combination with either belladonna or digitalis may be used, and failing these borax or salts of zinc may be tried. In certain inveterate cases Flechzig's opium bromide treatment may be adopted, due precautions being used.—*Medical Times and Hospital Gazette, June* 5, 1897.

25.—TYPHOID MENINGITIS.

By A. P. Ohlmacher, M.D.,
Professor of Pathology in the Cleveland College of Physicians and Surgeons, &c.

[The author first gives details of two cases, death occurring in the fourth week of typhoid fever. The typhoid bacillus was found in the meninges in both cases. He appends the following remarks:]

In viewing these two cases from the clinical standpoint the insignificance of the symptoms pointing to the meningeal disease is the most striking feature, and corresponds to the majority of the cases of typhoid meningitis recorded. To bring out this

point and to illustrate certain features in the pathology of this complication of typhoid fever, the following summary of the literature is presented. The Index Catalogue of the Surgeon-General's Library contains but five references to meningitis occurring in the course of typhoid fever, in the period from 1855 to 1887, and as no trustworthy bacteriologic examinations were made in these cases they can not be looked upon as typhoid meningitis in the strict sense. In the course of a study of meningitis, Neumann and Schaeffer (1887) found an extensive purulent leptomeningitis in a woman brought to the hospital unconscious, and who died in a few hours without furnishing any history. No lesions of typhoid fever were found, but pure cultures of a bacillus were obtained from the meninges, and these, the authors were led to believe, were of *Bacillus typhosus*, from the general characters and from the positive results of the potato and fermentation differential tests. A very similar case was reported soon after by Adenot, in which a woman presented profound symptoms of cerebral infection and died in eight days. Absolutely no typhoidal lesions were present in the intestines, spleen, and mesenteric glands, but from the sero-purulent exudate in the soft meninges a bacillus resembling the typhoid organism was obtained. The only differential test here applied was the growth on potato, and we now know that this is not sufficient to identify the bacillus of typhoid fever. The case recorded by Balp also belongs in the same category with those of the authors just noted. He found a diffuse purulent meningitis in a patient dying five days after a fracture of the skull, and in the exudate a bacillus resembling the Eberth organism was found, together with a species of diplococcus. The phenol and indol tests are the only ones that Balp mentions having used for differentiation.

A case of meningitis occurring in the course of typhoid fever was described by Kamen, in 1890, in a soldier who entered the hospital after having been ill for five days. A severe headache set in three days later, followed by delirium and unconsciousness, and death occurred eight days after admission to the hospital. Aside from acute splenic tumour and a single typhoid ulcer near the cæcal junction of the ileum, the post-mortem examination showed an extensive purulent leptomeningitis. The cultures obtained from the spleen, mesenteric glands, and meninges were identical, though only the potato test is mentioned as having been employed for identification. The following year Fernet reported the case of a woman who developed headache, delirium, strabismus, exophthalmus, retention of urine, and irregularity of the pupils in the course of a typhoid fever. At autopsy the characteristic changes of typhoid were found in the abdominal cavity, and a diffuse serous meningitis was also present. It is claimed that typhoid bacilli were isolated from the meningeal

fluid, though no mention is made of special tests. Silva likewise observed at autopsy in a female epileptic, 10 years of age, a serohemorrhagic leptomeningitis with a lobar pneumonia and the ordinary evidences of typhoid fever. Typhoid bacilli were isolated from the meninges and carefully identified. Still another case was reported by Honl, who found a diffuse purulent leptomeningitis in a 21 year old woman who died in the course of typhoid fever. An exhaustive differential examination showed the only bacterial species obtained from the meningeal exudate to be *Bacillus typhosus*. Cases essentially similar to those just noted have been reported since 1892 by Vincent, Hintze, Mensi and Carbone, Stühlen, Tictine, Kühnau, and a second one by Kamen. Tictine reported two cases which came under his observation, and he also produced a purulent meningitis in animals by means of subdural inoculations with typhoid cultures. The second one of his cases differs from all the others in that the patient was perfectly conscious during the whole of the last week of his life.

Profound unconsciousness, delirium, coma, and often retention of urine are the symptoms most often described in these cases. Other symptoms which might suggest an actual meningitis are usually insignificant, and can scarcely be looked upon as of diagnostic import. To this rule, however, the case mentioned by Mensi and Carbone is a notable exception. Their patient was a girl 6 years of age, who had been ill nine days before entering the hospital. The patient ran the course of a moderate attack of typhoid fever, reaching the stage of apyrexia four weeks after coming to the hospital. Four days later a violent chill occurred, with intense headache and a temperature of 39·2° C. Delirium, opisthotonus, contractions, amblyopia, and dilated non-responsive pupils were successively noted, together with a herpes labialis, paresis of right face, and retraction of abdominal wall. Great prostration followed, and death occurred four days after the onset of this relapse. The autopsy showed a fibrino-purulent cerebro-spinal meningitis with dilatation of the lateral ventricles, and a bronchitis of the medium and smaller bronchioles. Numerous typical typhoid ulcers in the stage of healing were found in the ileum and colon; the mesenteric glands were swollen and soft, and there was softening of the spleen. A thorough bacteriologic examination of the meningeal exudate resulted in finding typhoid bacilli as the sole bacterial inhabitant.—*Journal of the American Medical Association, August*, 1897.

26.—HYPNOTICS : THEIR CONTRA-INDICATIONS AND ILL-EFFECTS.

By Alexander McPhedran, M.B.,
Professor of Medicine, University of Toronto, &c.

[The following is taken from Dr. McPhedran's paper read before the Montreal Meeting of the British Medical Association, 1897 :]

In a general way it may be said that hypnotics should not be used in those in whom the cause of insomnia is palpable and removable. These causes may be briefly summarised as follows : — (1) Digestive derangements, whether from improper food and drink, insanitary surroundings, or from whatever cause. In this class are to be included nearly all cases of disturbance of sleep in children in whom faults of digestion form the bulk of all their ailments. In the adult, however, these same causes play a very, if not the most, important part in the production of insomnia, much greater than they are usually credited with. In the adult, the insomnia is more often the result of the absorption of toxic agents produced by the ill-digested food in the digestive track. (2) Local irritations, such as dentition, irritable diseases of the skin, disturbance of the urinary tract. These are also most common in children. To these may be added reflex disturbances from disease of the uterus and its appendages. Eyestrain is credited with being a frequent cause of insomnia as well as other reflex disturbances. (3) Overwork and the neurasthenic condition resulting therefrom. (4) Anxiety and worry. These should be really included with overwork, as they disturb the stability of the cerebral cells in the same manner. (5) Toxic causes are common. Many of them result from derangements of digestion, and are included under that head. Others result from chronic disease—as gout, lithæmia, chronic constipation, and Bright's disease. With these may also be included toxæmia produced by excessive indulgence in tea, coffee, tobacco, alcohol, and the habitual use or abuse of such drugs as morphine, chloral hydrate, cocaine, &c. (6) A very important group of cases of insomnia is formed by those suffering from disturbed cerebral circulation, whether due to cardiac, renal, or pulmonary disease, or to disease of the cerebral vessels themselves. The blood supply may be excessive and vascular tension high, as in arterio-sclerosis before cardiac compensation fails; or defective and irregular, as in dilatation of the heart. While in some of these conditions the stronger hypnotics are the potent means at our disposal of giving relief, not only to the insomnia, but also to the causes of it, yet in many of them their use would be unwise, and might be disastrous. (7) In not a few sleeplessness is the result of long indulgence in pernicious habits, mental and physical, in regard

to sleep, such as irregular hours, various dissipations, the conning over after retiring of the difficulties and reverses, and perhaps, the successes of the day.

In the treatment of insomnia, then, our first duty is to seek out diligently and treat intelligently such obvious causes as may exist, as, to remedy digestive derangements whether of stomach or intestines; to stop the ingestion of unsuitable food and drink; to relieve constipation; to stimulate the free elimination of fatigue products; to relieve local irritations and reflex disturbances; to stop overwork and bring the daily duty within the capacity of the worker; to relieve anxiety; to correct as far as possible all disturbances of circulation; to relieve anæmic and debilitated conditions; to secure due regard to sanitary requirements; to cultivate good habits of sleep. In all this our aim is to remove all sources of irritation, direct or reflex, from the cerebral cells, to supply them with ample nutrition, and to cultivate healthy habits in them. Not until these indications are met is the resort to hypnotics legitimate, unless it be to overcome a temporary difficulty; the further use of them is injudicious, if not injurious. Unfortunately, there is a large class in whom the cause is not easily discovered nor easily removed; or it may be quite apparent and yet impossible of removal. Of such are many cases of neurasthenia, hysteria, and hypochondria. Many of these have a neuropathic temperament, inherited or acquired. In them slight causes, mental or physical, may induce insomnia.

When, then, should hypnotics be used? In acute diseases sleep is often a necessity in order to secure such a restoration of the vital powers as to render recovery of health, or even continuance of life, possible. The sleep obtained, although not characterised by benefit to an equal degree to that of natural sleep, yet is often invaluable. In chronic diseases the same temporary need may arise, but the use of hypnotics in the ordinary conditions of chronic disease is rarely attended by anything but evil. I need not stop to detail the injurious effect of morphine, chloral, cocaine, and alcohol. Of the continued use of bromides, it might be pointed out that in addition to the general cachexia with loss of appetite, disturbed digestion, anæmia, loss of memory, mental apathy, and commencing paralysis and trembling of the extremities that may be developed by their immoderate use, there may occur also marked mental aberration and alarming homicidal tendencies. Chloralose in three-grain doses has produced alarming collapse in a woman within an hour. Recovery was slow.

Sulphonal.—The administration of this drug is, even in moderate doses, occasionally followed by fatal results. The symptoms set in with abdominal pain and vomiting, scant and usually dark urine, owing to hæmatoporphyrinuria. Collapse

results, soon followed by death. These symptoms may appear suddenly after the patient has been under treatment for some time, and has been benefited by the drug. These effects have been most frequently met with in women with marked constipation. Owing to the constipation there is probably retention of the sulphonal in the system. But serious results have occurred without the existence of constipation to cause retention of the drug. It is evident that greater care is necessary in the administration of this drug than has generally been observed. The laity are coming to look upon it as a safe hypnotic, and many use it without restriction.

Trional.—Its continued use tends to give rise to various disturbances of consciousness, of speech, of hearing, and of vision, to loss of memory and to ataxia of movements in general. There may be involuntarily excretions of urine and fæces. To prevent these untoward symptoms its use should be intermitted from time to time.

Paraldehyde.—This is a comparatively safe hypnotic, yet large doses of it have been followed by serious effects. Great dyspnœa and collapse have resulted in a case of chronic bronchitis from one drachm. Somewhat larger doses have caused marked delirium with paresis of the functions generally, resembling delirium tremens of alcohol. The proneness to the formation of a confirmed habit is a strong reason why any hypnotic should be used carefully and with due appreciation of the needs of each individual case. And this propensity to form the drug habit is especially marked in neurasthenics, the very classes from which the cases of insomnia are most largely drawn.

In neurasthenia and in conditions of unstable nervous or physical equilibrium, whatever develops or creates self-discipline and self-control in the patient is of great value. Such self-discipline is interfered with by hypnotics. In some conditions the amount of narcotics necessary to induce sleep is so great that it is better to let the patient lie awake for two or three nights even than to give such large quantities. If power of compensation be lost, it cannot be restored by any means other than by lessening the labour and improving the nutrition of the parts that have failed. It would seem eminently unfitting in such a condition to resort to medication that interferes with digestion and assimilation and retards the processes of elimination, when the hope of cure must rest on restoration to a healthy metabolism.

It is wise practice to give hypnotics rarely, and only when other means have failed; then only in the smallest dose necessary to give sleep, being satisfied with the least amount of sleep that is safe.—*British Medical Journal, October* 2, 1897.

DISEASES OF THE ORGANS OF CIRCULATION.

27.—THE CHOICE OF THE VARIOUS PREPARATIONS OF DIGITALIS.

By H. A. Hare, M.D.,
Professor of Therapeutics in the Jefferson Medical College of Philadelphia.

[The following is taken from Dr. Hare's paper:]

For many years members of the medical profession have been wont to regard the various pharmaceutical preparations of digitalis as possessed of a widely different physiological effect, far exceeding the variation naturally arising from the relative strength of an infusion as compared to a tincture. It has been supposed that this variation depends upon the relative proportions of the various active principles of digitalis held in solution by the water or alcohol with which the preparation is made, and if it be true that each preparation has an effect of its own, it is also undoubtedly true that this is due to the reasons just suggested, as I am about to point out.

It will be recalled that digitalis contains at least five principles, of which four are physiologically active and the fifth inactive. Each of these ingredients possesses a physiological action of its own, and each has a solubility of its own. Of the four active constituents, digitalin, digitoxin, and digitalein act upon the heart muscle, while digitonin has an entirely different effect, namely, the power of depressing the vagus nerves centrically and peripherally and the inhibitory ganglia in the heart. The digitalin here referred to is not the digitalin of amorphous form prepared according to the process of Homolle, nor the crystalline digitalin of Nativelle, neither of which is a pure digitalin, but it is the digitalin of Schmiedeberg. The effect of Schmiedeberg's digitalin upon the heart is that of a powerful stimulant, for under its influence the individual heart-beats become more powerful (four to six times greater than normal) and it simultaneously causes a rise of blood pressure, first by increasing the strength of the heart, and second by stimulating the centric and peripheral vaso-motor apparatus. The physiological effects of digitalein and digitoxin are identical with those of digitalin except that they do not stimulate the vaso-motor center, nor the pneumogastric apparatus, and so do not directly raise blood-pressure or slow the heart. In other words they increase the force of ventricular contraction. The effect of digitonin being to depress the vagus nerves, it will be seen at once that it antagonises the vagal effect of the digitalin on these fibres, and

so prevents digitalis from slowing the heart to the extent that would result from the use of digitalin alone. It also depresses the heart muscle. The proportion of digitonin in digitalis varies, but it is not present in sufficient amount to entirely overcome the inhibitory influence of the digitalin.

If we now turn to a consideration of the solubilities of these principles we can readily explain the different effects produced by the infusion and tincture or fluid extract. Digitonin is soluble in water, as is digitalein, but digitalin is only slightly soluble and digitoxin is scarcely soluble in water at all. As a result the use of the infusion in a case of heart disease would not give the patient the same degree of cardiac power as the use of the tincture, for not only would the most powerful stimulant of all to the heart, vaso-motor system, and vagi be present in small amount, but in addition the large proportion of digitonin would antidote it. On the other hand, digitonin is sparingly soluble in alcohol, while digitalin and digitalein are readily soluble in it, digitoxin being slightly so. It would seem, therefore, that in the presence of a failing heart and circulation the tincture or the fluid extract are the preparations greatly to be preferred to the infusion, because they contain large amounts of the active stimulant ingredients.

The reason that the infusion acts efficiently in some cases as a diuretic, probably depends upon the fact that as it does not contain so much digitalin it is less apt to cause spasm of the renal vessels, but if the heart is feeble and there is renal stasis, the tincture is probably the better preparation to overcome this state, because it both aids the heart and by contracting the renal vessels overcomes the stasis. The use of digitalin is inadvisable unless we are sure that we get that made according to the process of Schmiedeberg, for the other digitalins usually sold are very uncertain. The infusion is far more apt to disorder the stomach than the fluid extract or tincture, because of the irritating digitonin.—*Therapeutic Gazette, August* 16, 1897.

28.—THE VALUE OF THE RÖNTGEN RAYS IN CARDIAC DIAGNOSIS.

By Albert Abrams, A.M., M.D.,
Professor of Pathology, Cooper Medical College,
San Francisco.

[The following is taken from Dr. Abrams' paper. The figures have been omitted.]

The estimation of the size and shape of the heart by the Röntgen rays affords a trustworthy guide by direct vision. This

method is especially applicable in adults and children with thoraces scantily furnished with musculature and panniculus, although obese individuals are not always exempt from this method of examination. Before appreciating departures from the normal, it is absolutely necessary for the observer to acquaint himself with the appearances of the heart in the normal condition. It is also necessary to employ the requisite apparatus. Without the latter, skill and experience count for naught. In my work I employ an eight-plate static machine, made by Van Houten and Ten Broeck, of New York city. I also employ a Newton fluorescent screen, which yields exceptionally good results. If an individual is so placed before a vacuum tube that the rays pass through the chest, the heart may be seen by the aid of the screen as a definite shadow, surrounded by a light area, occupied by the lungs. The movements of the heart can also be detected, particularly so when the patient is instructed to take a deep inspiration. The latter manœuvre also aids in defining more clearly the boundaries of the heart. The Röntgen-ray illumination demonstrates that the apex approaches the base of the heart during systole, so that there is no apex impulse, in the sense of Skoda, but merely a lateral systolic apical stroke. It is also shown by direct vision that the ventricles do not completely empty themselves at each systole. When the patient takes a deep inspiration the diaphragm descends, and the lower margin of the heart can be separated from the liver, as manifested by a bright line between the two organs. The latter phenomenon is of exceptional value in diagnosis, for by the conventional methods of percussion the separation of the lower margin of the heart from the liver is impossible. With a little practice an outline of the heart can be traced on the chest wall. A dermograph in a metallic casing should be employed for tracing purposes. It is difficult, without considerable practice, to accurately define the position of the dermograph through the screen, and each observer will be compelled to improvise some specially constructed marker for tracing purposes. Another simpler, though less practical, method is to attach a sheet of white paper to the back of the fluorescent screen. The screen is next placed in position to obtain a clear outline of the heart, and this outline is traced on paper with a suitable pencil. The method which I usually employ to the best advantage is to trace directly on the glass covering my screen the outline of the heart with a pencil for writing on glass. This necessitates working in a dark room. The figure on the glass is then transferred to tracing paper, and the latter properly filed for future reference. The best position of the patient in relation to the focus tube for cardiographic purposes can only be determined by experience.

The entire outline of the heart can be determined with a front

view. From the posterior surface of the chest wall only a portion of the organ is seen, owing to a part of the heart being obscured by its position in front of the vertebral column and the oblique situs of the organ in the thorax. The shadow to the left of the vertebral column corresponds to the left ventricle, and the shadow to the right of the column corresponds to the right auricle. Radiography applied to the chest enables one to diagnosticate aneurism of the aorta, cardiac aneurism, and dilatation of the heart. As an instance of the value of the Röntgen rays in diagnosis the following case may be cited:—An individual was referred to me for diagnosis. Several physicians had examined him, and they had all concurred in the opinion that there was a pericardial effusion. The physical signs were undoubtedly those of fluid effused into the pericardium, but there was some evidence suggesting cardiac dilatation as a possible condition. The diagnostic verdict was in favour of the latter, as determined by the Röntgen rays. It was possible, in this case, by means of the fluorescent screen to accurately define the borders of the heart, and to note that the apical stroke corresponded exactly with the extreme left border of the shadow outline of the heart. The apical movements were more clearly defined on the posterior surface of the chest wall. It is apparent that if an effusion were present, and the movements of the apex could be discerned, they would be within the shadow of the heart and not confined to the extreme left border of that organ. In carrying out the Schott treatment, the Röntgen rays, in controlling the progress of my cases, have furnished me definite and invaluable assistance. After faithfully mapping out the outlines of the heart, tracings can be taken directly from the chest and preserved for future reference. The examination of the heart by direct vision, enables us further to determine with certainty the influence of posture and respiration on the position of the heart, the presence or absence of pleuro-pericardial synechiæ, and the extent of the apical stroke, which is invaluable in the diagnosis of hypertrophy or dilatation of the left ventricle. —*The New York Medical Journal, June* 12, 1897.

29.—THE COMPLETE DIAGNOSIS OF CARDIAC DISEASE.

By J. Mitchell Bruce, M.A., M.D., F.R.C.P.,
Physician to Charing Cross Hospital.

[The following is taken from Dr. Bruce's paper:]

(1) The first step in the complete diagnosis of disease of the heart is the location of the lesion. Let us now consider for a moment how far this regional diagnosis, the location of the

lesion, instructs us in the prognosis and treatment of the disease: how far prognostic and therapeutical principles can be derived from a knowledge of the seat of the disease alone. I will confine myself here to valvular lesions. Mitral and aortic lesions are of different significance practically. The effects of mitral disease fall first upon the pulmonary circuit, including the pulmonary veins, capillaries, and artery, and on the right ventricle and auricle which maintain the circulation through these. We can tell this by the disposition to dyspnœa and cough on exertion, by the amount and colour of blood in the face, by the signs of enlargement of the right ventricle and the loud second sound over the pulmonary base. If compensation is disturbed the phenomena of mechanical congestion of the veins, including those of the viscera, quickly supervene, and thereupon dropsy, hemorrhage, and interference with nutrition. There is nothing absolutely grave prognostically in this condition, but a prospect of slow impairment of nutrition and of general functional capacity, with the risk of acute exacerbations which will ultimately prove fatal. As regards treatment, the special indications derived from the mitral locality of a valvular lesion are to protect the lungs against the causes of catarrhs and respiratory strain; to unload them, if congestion becomes extreme, by means of abstraction of blood; to take free advantage of the portal system in order to relieve venous congestion by means of purgatives; and to have recourse, in desperate conditions of mechanical congestion, to acupuncture. All these, of course, in addition to strengthening the myocardium with proper nourishment, evoking fresh force with digitalis and other cardiac stimulants, and lightening the peripheral resistance as much as possible. Aortic lesions have different effects at first from those of mitral lesions. These are chiefly arterial and visceral anæmia, manifested by pallor and faintness, giddiness, and other cerebral disturbances; and distress in connection with the left ventricle, including præcordial oppression, pain, and palpitation. The prospect here is not so promising as regards length or security of life. If difficulty arise, it concerns the supply of living blood to the brain and the heart itself; and it concerns the emptying of the left ventricle, behind which is a valve, so that over-distension means grave embarrassment or risk of instant death. Involvement of lungs and mechanical congestion and dropsy are further effects which make their appearance when the mitral yields or the right heart fails. There is, however, another feature connected with aortic disease, of a purely anatomical kind (that is, referable to the situation of the lesion) which has a great influence on the course and prognosis of the disease. Lesions of the aortic valves are often associated with disease of the coronaries, and indeed may occasionally produce it. The result is interference with local nutrition in the myocardium: the very form of valvular disease

which calls for the largest supply of blood is the one most calculated to impair it. The treatment indicated for aortic disease is to maintain the nutrition of the myocardium in the face of special dangers or difficulties; to moderate the demand for blood in the tissues—that is, throughout the body generally; to improve the condition of the blood (so that quality may compensate for quantity) by means of iron, arsenic, and the like; and when symptoms of distress supervene, to promote easy and sufficient evacuation of the left ventricle by means of rest, iodides, nitrites, and digitalis. Should failure of the heart develop more slowly, and the right ventricle dilate as well as the left, digitalis, strychnine, and other cardiac stimulants will have to be employed exactly as in mitral disease.

(2) The second step in the complete diagnosis of valvular disease is one which is sometimes neglected. It is to determine the nature or kind of disease of the valve—to make the pathological diagnosis.

(3) The third step in diagnosis is to determine the presence character, and completeness or sufficiency of compensation. This phrase "compensation" has been and is so intimately and unfailingly associated with disease of the heart that one might think the inquiry would never be overlooked or neglected in practical medicine. Indeed, "compensation" seems to be regarded as a *spécialité* of cardiac pathology. We forget that there is probably no chronic disease of any organ in which compensation does not participate—in phthisis, in chronic pleurisy, in Bright's disease, in dilated stomach, and so on through the solid viscera, including liver and brain. We overlook the consideration that without compensation in the widest sense we should have hope neither in our prognosis nor in our treatment. Natural recovery—by physiological as well as by anatomical repair—is the very foundation of the favourable terminations of disease of every kind. The fully compensated heart or compensated lesion is attended with no persistent symptom. But compensation is a relative term: compensation in the face of work and licence generally; compensation without strain of muscle or tax of mind; compensation with rest of body and mind insured. The appreciation of this fact is the basis of the advice given prognostically about the life and work of our patients, particularly boys, and the key to the full diagnosis of failure. Failure of compensation is easily recognised by the many familiar symptoms of labouring and failing heart and by physical signs. Its mechanism is perhaps not so clearly understood as it ought to be. When a cardiac chamber fails to display and sustain the necessary pressure on its contents, the end of systolic time finds an insufficient systole, evacuation, or discharge. The next diastole provides for a fresh charge as usual; but the place of this is already partly occupied by the

residue of the previous discharge. One of three things must now happen:—Either the walls of the chambers must be stretched till they provide accommodation for the increased amount of blood; or the charge that is being driven into the chamber must be incomplete, leading to backward pressure; or the wall of the chamber must give way. The first and second results of failure occur together, and constitute residual dilatation of the heart and mechanical congestion; the third means rupture, which is happily very rare, because the other effects occur instead.

(4) Non-valvular disease of the heart is the most difficult subject of all in connection with cardiac disease in practice. The heart becomes affected in action and structure (whether for good or for evil) in adherent pericardium; in certain morbid changes of its own walls, especially such as originate in coronary disease; in arterial degeneration; in chronic Bright's disease; in protracted stress or strain of the circulation; and in prolonged nervous excitement or disturbance. Most of these pathological processes affect the heart by demanding more force from it; some of them withhold nourishment from the heart and thus indirectly place it at a disadvantage—*i.e.*, in relation to the work which it must accomplish; many of them do both at once—Bright's disease, for example. For a time compensation may be built up and maintained; but presently failure occurs here as in valvular disease, associated with dilatation, and on the whole with less prospect of recovering compensation.

Whether the heart be healthy, or whether (as is usually the case) it be damaged (anatomically by valvular disease, physiologically by the strain of increased resistance), it breaks down if the blood supplied through the coronaries be poisoned or deficient. Deficiency of blood is met with in coronary disease (obliterative, degenerative, syphilitic, inflammatory—a heterogeneous group); in general anæmia—many forms, which connect failure of the heart with hemorrhage, uterine disease, pregnancy, parturition, menorrhagia, poverty; in insanitation and toxæmia (tobacco, alcohol, tea, drugs, intrinsic poisons). We must not forget to add to these the subtle influence of the nervous system: partly acting on nutrition, partly by increasing the demand for work, partly by deranging delicate adaptations. When failure can be traced to defective nutrition or poisoning, the prognosis may often be favourable—at any rate, the immediate prognosis, as a few days' good feeding and warmth prove. Treatment ought to consist in these comforts, associated, of course, with rest and the other measures indicated by the situation and kind of the lesion. In a word we must take a fourth step in the diagnosis of every case of heart disease with failure that comes before us—namely, the diagnosis of the cause of failure.—*The Practitioner, October*, 1897.

30.—TRAUMATIC ENDOCARDITIS.

It is pretty generally recognised that serious lesions of deep-seated organs may result from traumatism that is unattended with obvious external injury, and especially when the affected viscus is already the seat of disease. Thus the lung may be torn, the brain lacerated, a heart-valve rent asunder in consequence of violence expended upon the bony coverings of these parts, though perhaps without severance in continuity. Through the same mechanism may take place laceration of an eroded pulmonary vessel or rupture of a cerebral abscess or of a thoracic aneurism. In all likelihood similar influences may give rise to inflammatory reaction, as manifested by pleuritis, or meningitis, but additional evidence is needed to convert probability into certainty.

In an interesting communication presented recently to the Berlin Society for Internal Medicine, Litten (*Berliner klinische Wochenschrift*, June 28, 1897, p. 571) makes a valuable contribution to the subject of traumatic endocarditis. He points out that the injuries to which the heart-valves are susceptible consist in detachment, separation, contusion and laceration of the endocardium, with subserous hemorrhage. These may occur in the absence of all evidence of external injury, even in cases that progress to a fatal termination. Cases in which merely existing compensation for a pre-existing valvular lesion is deranged, as a result of traumatism, are of course, not instances of traumatic endocarditis, and do not belong in the category of those under consideration. Those cases also are to be excluded in which as a result of traumatism at any portion of the body micro-organisms gain entrance to the circulation and localise themselves upon the endocardium. These represent instances of septic endocarditis secondary to general infection. Most of the cases heretofore described as examples of traumatic endocarditis have been of this kind. Only those cases are considered in this connection in which simple benign verrucose endocarditis develops, in direct relation with a previous injury to the chest. In the accurate determination of this relation it is essential that the state of the heart before or at the time of the reception of the injury shall have been known, as well as that at varying periods afterward. Litten relates three cases in which he believes such a relation to have been established. One occurred in a young man, previously healthy, who was crushed between his horse and a resisting surface. The resulting pain was so severe as to cause the man to fall. When examined he complained of a feeling of anxiety, palpitation of the heart, a sense of oppression and dyspnœa, with fever and cyanosis. After the lapse of several months a loud systolic murmur was heard at the apex of the heart and one also over the aorta, together with enlargement of the right ventricle and in less degree also of the

left. A diagnosis of mitral insufficiency and aortic endocarditis leading to aortic obstruction was made. While in this case the endocarditis was followed by a valvular defect, in the second case reported perfect recovery ensued. A labourer employed in the construction of a bridge received a heavy blow in the left side of the chest which rendered him unconscious. He suffered from dyspnœa, palpitation of the heart, and pains in the chest radiating toward the shoulder, with cyanosis and a small, frequent pulse. The heart appeared to be normal, and recovery had taken place after the lapse of four days. The heart sounds were pure, though feeble. On the fifteenth day a systolic murmur was audible at the apex and gradually increased in intensity. No hypertrophy of the right ventricle could be made out. After the lapse of nine months the murmur had entirely disappeared, and could not be induced by active muscular exertion. The third case occurred in a man who had long been under observation on account of an œsophageal diverticulum and had never presented any cardiac abnormality. While ascending a ladder with some stone he fell backward and received a heavy weight upon the left side of the chest. When shock had been recovered from, the heart sounds were found normal for several days. After the lapse of a number of weeks a systolic murmur could be heard, indicative of mitral insufficiency, with hypertrophy of both ventricles.

Numerous cases like the foregoing have been reported, but they lose much of their significance because the condition of the heart immediately after the accident is not noted. Many months may elapse before a murmur becomes audible. A distinction must be made between the traumatic rupture of healthy and that of diseased valves. The latter may take place spontaneously; it is the more common and usually affects the aortic valve. Under these circumstances, manifestations of aortic insufficiency set in suddenly, and the condition is readily recognised. Laceration of the mitral valve has thus far not yet been observed, but only that of the chordæ tendineæ and of the papillary muscles. The prognosis of traumatic aortic insufficiency is more unfavourable than that of the spontaneous variety. Death often occurs before hypertrophy of the left ventricle can take place.—*A leader in the Journal of the American Medical Association, August* 21, 1897.

31.—WEAK HEARTS.

By Samuel Gee, M.D., F.R.C.P.

[The following is taken from a clinical lecture by Dr. Gee:]

In the hospital we meet with many cases of heart affections, but they are almost all due to valvular disease, any affection of

the muscular walls or of nerve supply being secondary to disease of fibrous structures, especially the endocardial. In private practice cases of this kind are seldom met with; most affections of the heart are muscular or nervous from the first. In hospitals we are great in murmurs and thrills; in private practice auscultation and percussion more often than not are of no avail, unless to tell us that there is nothing wrong with the heart that they can discover. They will tell us what there is not, rather than what there is. It would be interesting to go into the reasons for this difference of disease in the different ranks of life; one great factor is that rheumatic fever is comparatively rare in private practice.

Weak hearts are indicated by symptoms of three kinds:—(1) Sensations referred to the heart. (2) Shortness of breath. (3) Changes in the pulse.

(1) Sensations referred to the heart.—(*a*) Pain, which may be of all degrees of severity; usually slight, sometimes so slight that patients will often refuse to use the word pain, but sometimes as bad as in genuine angina pectoris. By genuine angina pectoris I mean the pain associated with degeneration of the muscular walls of the heart. This form, not due to structural disease of the organ, is especially apt to occur in women, which they call heart attacks. During such an attack the extremities sometimes become cold and blue, "dead fingers," as they are often called. If a young woman is suffering from pain having all the features of angina, you must take my word for it that the probability of muscular degeneration of the heart is very slight indeed. Another point of difference is that the ordinary remedies for angina do no good, but even harm, and I never think of giving nitrites in these cases. These sensations, more or less painful, may be felt over any part of the heart. Sometimes there is a feeling of tightness across the chest, hence Heberden gave it the name *angina* pectoris. Sometimes the pain is not over the heart at all,—for instance, just below the right nipple or between the shoulder-blades high up. If it be felt over the epigastrium it is by no means easy to distinguish it from a stomach pain, especially as these patients often have weak stomachs. (*b*) Palpitations.—These may be either ordinary palpitations in which all the heart-beats are sensible to the patient, or a form in which only one or two beats are thus felt. There is a prolonged diastole, during which the pulse at the wrist intermits, then the heart gives a sort of kick (sensible by the patient), and then goes on beating again. This is a very common symptom in weak hearts. Patients sometimes speak of the heart "fluttering." It is difficult to know exactly to what this is due; nothing abnormal is heard on examination. (*c*) Indescribable sensations referred to the heart. These, when bad, occasion much distress, and patients feel as if they were dying. Anguish is a name

often given to this symptom. These morbid conditions are often brought on by exertion, excitement, or by taking food (especially indigestible food). But sometimes the immediate cause of the attack is not obvious,—as, for instance, when it comes on during sleep.

(2) Shortness of breath on slight exertion, such as going upstairs, is the second kind of symptom. A French physician said, if a patient complain of shortness of breath don't examine his lungs, examine his heart.

(3) Changes in the pulse. The pulse may be disturbed in frequency or in regularity. In the former instance it may be too frequent to count, but if you use a sphygmograph cleverly you may find the rate to be 200 or more, but quite regular. These attacks of frequent action of the heart lasting an hour or two are usually due to reflex disturbance, generally from the stomach, and they may be quite relieved by vomiting. There is no evidence of any affection of the heart. But in "weak hearts" the increased frequency is constant, seldom so frequent that the pulse cannot be counted. In the other class of cases the pulse is irregular or intermittent, and intermittence is usually associated with "thudding," and sensations referred to the heart.

These are the chief symptoms, and, as I have said, there are no definite physical signs. The impulse of the heart is often very weak, and sometimes impalpable; but the patient is often fat, and sometimes emphysematous. The sounds are natural or merely weak, percussion may sometimes be able to detect slight dilatation.

Ætiology.—Turning to ætiology, or the conditions under which weak heart occurs, we sometimes meet with a tendency to fits of palpitation in children; with this exception, the heart affection is one of adult life, of any age and both sexes. I am here not speaking of palpitation except as a symptom of weak heart. The probability of degeneration of the heart is greater after 40 years of age, and greater the older the patient, so that age is an important factor in prognosis. It occurs in both sexes pretty equally, but the probability of degeneration is greater in men than in women. In women under 40 the symptoms are probably due to nervous derangement. The influence of family tendency is most undoubted. Perhaps the mother of a family suffers from a weak heart, and as the years go on you find the daughters one by one, as they reach 50, begin to break down in exactly the same way. The strain of life has much to do with it—worries, cares, business anxieties, and overwork. These conditions begin to tell when people have passed 40 years. It is common in business men who have led a toilsome exciting life, who have worked up a large business from small beginnings, and have attained to wealth, perhaps great wealth. The meals of such men have been hurried and irregular, often a very hurried breakfast followed

by no lunch. If they live out of town they are constantly hurrying to catch trains. There is often a history of a great deal too much alcohol, and perhaps tobacco; they find their strength failing, and they fly to alcohol for support; their lunch becomes an excuse for drinking, their dinner is accompanied by champagne, and followed by port. These patients are often gouty, and suffer from arterial changes. A similar state is common in professional men—and, I am sorry to say, especially in our own profession. I am even disposed to think the normal mode of death in a medical man is through a failing heart. He lives one long round of broken nights, of interrupted meals, of ceaseless work. The same is true of clergymen, who, whatever they did in the past, certainly lead no easy life to-day. But undoubtedly hearts like this are sometimes found in people who have lived a quiet temperate life; we must all grow old, and many people grow old in their hearts first. For the last eight years a very potent cause of weak heart has been rife, and that is influenza. Those past their prime, say past 40, fall victims to this. During an attack of influenza the heart sometimes suffers—its action is very feeble, the pulse feeble and very frequent, or in other cases infrequent, irregular, and intermittent. There is palpitation and pain of all kinds, sometimes like genuine angina pectoris. Sometimes people die during the attack of influenza from these heart symptoms. But if they recover from the attack, usually their heart never wholly recovers. And that is the worst of influenza; there are so many left with its legacy of weak heart. A strain to the heart very commonly comes on suddenly during violent exertion. This is a factor at all ages, but especially in people just past youth, say past 30. I have known golf the cause of this strained heart, as it is a game often played by men past their prime. Bicycling is a very common cause, especially in oldish people, but also at any age when excessive. Bicycling uphill is the worst of all; quite a number of elderly men have died on the spot while going uphill. I should say that when patients at any age have once strained their hearts in any of these ways they seldom completely recover. Tobacco in excess is a cause of all these symptoms in some people; excess of tea also, but this is a much less potent cause than tobacco. In many patients there are signs of general nervous debility, "neurasthenia"—constant headache and backache, atonic dyspepsia, sleeplessness, and sometimes melancholia.

Course of the disease.—People past middle life never wholly recover, but by taking great care of themselves they may live many years, and at last die of something else. Sometimes they become subject to genuine angina pectoris and all its dangers, sometimes they manifest symptoms of fatty heart and a tendency to syncope, sometimes of a dilated heart and dropsy. Sometimes all these conditions occur together before death. In

elderly people death may occur in two or three months after the first occurrence of symptoms.

Treatment.—Patients must avoid exertion; exercise must be moderate, the amount depending on the degree of the disease. Particularly they must avoid all hurry. Tobacco they had much better give up altogether, for this is one of the things of which old Dr. Samuel Johnson's saying is very true, "It is more easy to abstain than to be abstemious." They should avoid indigestible foods, all over-eating, and drinking too much liquid at meals; they must be strictly temperate in alcohol. They must be got away if possible from an exacting business or profession for several months. A bracing place is best, they do not do well in hot climates; mountainous climates are not advisable, not only because of the climbing, but because of the rarefaction of the air. The easiest way, very often, of getting a man out of business is to send him abroad; English people prefer it; and if you name a place like Nauheim, which has a reputation in the treatment of heart disease, people will often go there who will not go anywhere else: moreover they are out of call to business, and they will stop away longer than they would in their native country. I am doubtful if there be any specific character in the treatment there; it is a dull, quiet life, and their diet and habits are regulated; but they all know the name of Nauheim, and will quite cheer up at the idea, buoyed by hope, the best of tonics. As to drugs, two are especially useful, arsenic and strychnine. I usually prescribe arseniate of soda, $\frac{1}{40}$ of a grain in a pill, and about the same dose of strychnine. These should be given for a considerable time. Arsenic is particularly good in cases where there is pain. Digitalis is no use here. Really bad cases had better take no exercise at all; they should go about in a Bath chair, and be carried upstairs. Cases tending to end in dropsy should be treated as for dilated heart, and digitalis and strophanthus may now be tried.—*St. Bartholomew's Hospital Journal, September*, 1897.

32.—THE "SCHOTT TREATMENT" OF CARDIAC DISEASE.

By C. N. B. Camac, M.D.,

First Assistant Resident Physician Johns Hopkins Hospital, Baltimore.

[The following is taken from Dr. Camac's paper based on experience obtained in the Johns Hopkins Hospital:]

The following are the rules which have been laid down for the administration of the bath. Most of these rules have been made after perusal of the literature and from instructions obtained from Dr. Schott personally. The bath should be given on an

empty stomach; allow the patient to make as little exertion as possible; assist him in every way. A sheet may be drawn over the tub, but not around the patient. Be sure that the entire body is immersed. Keep the finger on the pulse during the entire time the patient is in the bath.

Danger signals.—Cyanosis; dyspnœa; apnœa; inappreciable pulse. On the appearance of any of these, take the patient out of the bath immediately, put him to bed, and keep him as quiet as possible. Friction while in the bath is not necessary, but if the fingers and toes become bluish the extremities may be rubbed slightly toward the trunk. Friction should be cautiously employed; when the patient is out of the tub rub him to a glow; give him a glass of milk or cup of bouillon and allow him to rest for an hour.

Diet.—Small quantity q. 4h. meat, boiled chicken, mutton chops; eggs, two a day; oysters raw or panned; vegetables of all kinds; peas, beans, lettuce; liquids; beef tea, bouillon, cocoa, lemonade, milk. *Note.*—Never give more than 4 ounces of fluid at a time. Should be sipped. *Wine.*—Port, Rhine, sherry, brandy; dram to half-ounce. Something light (cocoa and toast) should be taken one hour before the bath; something light and hot (bouillon, milk punch and toasted crackers) should be taken directly after the bath. If the heart's action is poor, sherry, brandy, or port wine may be given after the bath. Last meal to be taken three hours before retiring.

The exercises, which are called by Dr. Schott "Widerstand-gymnastik," or resistance gymnastics, are slow movements executed by the patients, and resisted by the physician or operator. The exertion is the very least that can be employed and should cause no fatigue on the part of the patient. Light, loose clothing should be worn by the patient, and he should be instructed to breathe quietly. It is hardly necessary to give full explanation of the exercises here, as it demands considerable attention, and is more in the order of a drill than of an explanation. It is important, however, to state that these movements should not be administered without thorough training from one competent to give it. The movements are nineteen in number, and involve all the larger muscles of the body. This portion of the treatment we have entrusted to our nurses, who have received thorough instruction, and whom we find are better adapted to the administration of the light resistance than are men. Since November we have had under treatment ten cases. Of these ten we have had four deaths, two have shown no improvement, one has shown improvement only during the treatment, and three have shown continued improvement.

No one would claim to cure cases of chronic heart disease; all that one can hope for is to place the heart in a functional condition which in relation to the rest of the organism is the best

possible compatible with the lesion which exists. In the three cases which have shown continued improvement the results have been very satisfactory, one might say even striking. Of the four deaths No. 1 was a case of aortic insufficiency; No. 2 of dilatation and arterio-sclerosis; No. 3 of chronic nephritis; No. 4 of mitral stenosis. Although the chronic nephritis case was manifestly inappropriate to the treatment, it was selected for the purpose of noting the action upon the kidneys. In this case, a young girl whose condition at no time was hopeful, the œdema of the genitalia and lower extremities on admission was so extensive that it was impossible to approximate the legs. The features were almost unrecognisable. Beyond a very slight response amounting to about 500 c.c., there was no increase in the urine excreted. As an extreme case, therefore, of chronic nephritis this was in no way aided by the treatment. Another case, on the contrary, of chronic interstitial nephritis and tachycardia, the action upon the excretion of urine was most striking. The patient was removed to the isolation ward owing to the unmanageable condition in which she was, following uræmia. This case we considered as receiving benefit only during treatment. The improvement was not lasting. The second fatal case (the first being the chronic nephritis in the girl first mentioned) was that of a coloured man with marked signs of aortic insufficiency, accompanied by the Flint murmur at the apex. This was an extreme case whose condition had become so serious that he was removed to the isolation ward. So far from the median line was the apex beat that it seemed a suitable case upon which to note the effect of the baths. The point of maximum impulse was seen in the fifth space, 13½ cm. from the median line. After the first bath the apex beat was seen in the fifth space 11 cm. from the median line. The day following, the maximum impulse was seen in the fifth space 10 cm. from the median line, and on the following day a second bath was given and the apex beat was found in the fifth space 8 cm. from the median line. The patient improved very markedly, became clearer in his head, and was quite manageable. On the 16th, four days after the first bath, the patient died suddenly. An effusion at once suggests itself, but there were no signs of such. The third fatal case was a private one who showed signs of cardiac dilatation and a moderate degree of thickening of the vessels. This patient was given movements from February 21 to April 4. He was extensively œdematous, especially the legs. It was never possible to make very careful examinations of the cardiac outline. The pulse, however, which had been very weak and of small volume, improved very distinctly in the course of the treatment. The œdema almost wholly disappeared, and the patient from being confined to a chair was able to be up and occasionally to drive. March 29 and 30, he took a drive and slept well. On

March 31 he had a very restless night, but on April 1 was again able to drive. For this patient this was a very great improvement, considering he had spent months in his room. On April 3 he had a very restless night, and from this date he steadily declined, dying suddenly on April 7. The fourth fatal case was one of mitral stenosis. The change in the apex beat was very striking. This man came into the hospital suffering from great dyspnœa and distress and cyanosis; under the treatment he was able to be up and about the ward, and on the day before Christmas was so much improved as to go to his home. He was, however, an intemperate fellow, and got into a spree on Christmas Eve, during which he fell dead.

In these four fatal cases are shown the marked influence upon (1) the position of the apex beat, (2) the increase in the amount of urine in spite of the nephritis in one case, (3) the very marked improvement in the pulse in the case of the cardiac dilatation which was associated also with arterio-sclerosis, (4) the inefficiency of the treatment on a case of extreme nephritis.

The two cases which showed no improvement, one was that of cardiac dilatation, and gycosuria; the other cardiac dilatation with chronic nephritis. Although the area of cardiac dulness was diminished and the pulse tracing, which were taken by Dr. McCrae, assumed a more definite character, the œdema never diminished, and the patient was discharged practically unimproved. We therefore see that in these seven cases so far reported, those in which the kidneys were extensively involved, no improvement resulted. In those cases in which there was nephritis, but of a less severe grade, the improvement could scarcely be regarded as such, so transient was it.

Of the three cases of continued improvement, the most striking is that of a coloured man. It is a fact to be noted that whereas the white patients will resist for a long time vascular changes, yet in the coloured race the outlook is relatively much graver. This was an old case who had visited the hospital a number of times, and upon his last admission it was noted that there was a distinct thickening of the vessels. He improved very markedly under the treatment, and although the baths were stopped at a date long before he was discharged from the hospital, he nevertheless, while under observation, was most comfortable, having no return of his dyspnœa or œdema. In this case the point of maximum impulse, instead of being moved in, was moved out. The second case was that of mitral insufficiency, who was given both the baths and movements. There was no change in the point of maximum impulse or area of cardiac dulness. The patient was discharged in good condition. The third case was one of tachycardia. Of these three cases of continued improvement it will be noted that very little change took place in the point of maximum impulse, whereas in those cases which showed

rapid improvement at first, and which afterward terminated fatally, the change in apex was very striking. As far as our ten cases go the results are in favour of the following three points:—(1) Extensive nephritis is a serious obstacle to good results from the baths and exercises, though if not too grave may be controlled by the treatment. (2) Extensive change in the position of the apex beat and cardiac outline do not necessarily indicate permanent good results. (3) Arterio-sclerosis may not wholly contraindicate the treatment.

In regard to the drugs employed, it may be mentioned that in the cases of nephritis, diluents were freely given. Infusion of digitalis was employed in dram doses every four hours, and occasionally the tincture of digitalis was used. Potassium iodide was administered, although sodium iodide is considered preferable. Strychnia, morphia, tr. strophan., nitro-glycerine were also used in some of the cases.

The diet laid down in our rules, while not strictly adhered to, was in the main followed out. While we have found no consistent change in the point of maximum impulse or in the cardiac outline, we have found in every case a slowing and strengthening of the pulse and a diminished tension.—*Journal of the American Medical Association, August* 28, 1897.

33.—ORRHOTHERAPY IN ULCERATIVE ENDOCARDITIS.

While recovery from so-called ulcerative or malignant endocarditis is difficult of demonstration, it would be unreasonable to contend that the disease is invariably fatal. On the other hand, in cases in which recovery ensues some doubt might justly remain as to the accuracy of the diagnosis. The knowledge that the lesions present in the cases under consideration are often dependent upon the activity of streptococci and staphylococci, would amply justify the employment of an antitoxic serum when the diagnosis may be ventured. The report of a case of probable ulcerative endocarditis in which successful results attended the use of antistreptococcic serum is therefore not without interest. The case occurred under the care of Dr. Margaret Dunn, at the Canning Town Medical Mission Hospital, and is reported in *The Lancet* of July 10, 1897. The patient was a girl, 16 years old, who complained of having had a "cold" for three weeks, with tightness in breathing. There was marked dyspnœa, pulse and respiration were accelerated, and the temperature was 101° F. Cardiac action was rapid and exaggerated, and a loud mitral systolic murmur could be heard, together with a faint diastolic murmur at the aortic area. Under treatment with salicylates no improvement took place. Upon inquiry it was learned that

the symptoms had been present about a month. In the course of several weeks aching pains appeared in the left shoulder, together with palpitation of the heart and shortness of breath. There was no previous history of rheumatism, and there had been no rheumatic manifestations beyond a transient erythema the year before. The patient did not appear very ill, but was bright and lively. There was considerable dyspnœa, but the girl was able to lie down. She complained of palpitation and of slight pain in the left shoulder. There was considerable perspiration without acid odour. Neither rash nor nodules nor anæmia was present. The apex beat of the heart was seen and felt in the fifth left interspace, three inches from midsternum. The area of cardiac percussion dulness was increased to the right. The sounds were muffled at the apex, but a mitral systolic murmur was distinguishable, as well as an aortic diastolic murmur and some pericardial friction sounds. At the base of the right lung dulness on percussion and diminished breath sounds indicated a small effusion.

For a week the patient showed signs of marked general improvement. The dyspnœa lessened, the slight joint pains disappeared, and the temperature gradually fell almost to normal. The physical signs, however, persisted and indicated increase in the pericardial effusion. An aortic systolic murmur became audible, in addition to the mitral systolic and the aortic diastolic. The edge of the spleen was indefinitely felt below the costal margin. During the following week the condition of the patient remained pretty much the same, the temperature rising, however, to 102° F. in the evening. An erythematous rash appeared, which spread by degrees over the limbs and face, disappearing after three days. The amount of fluid in the pericardium and at the right base diminished slightly in amount. The urine was normal throughout. In the next week the temperature remained elevated and the pulse became accelerated. The patient now complained of tenderness on palpation of the spleen, and the physical signs indicated a slight increase in the pericardial effusion. Treatment with salicylates having been unattended with satisfactory results, and the increasing severity of the symptoms suggesting the probability of the endocarditis having assumed a malignant character, it was decided to try the effect of treatment with antistreptococcic serum. Accordingly seven injections were made beneath the skin of the abdomen during a period of two weeks, at intervals of a day or two, in amounts varying from two and one-half to twenty cubic centimetres. During this period sharp pains and friction sounds appeared in the left axilla, and a transitory presystolic murmur became audible. Ultimately, however, the temperature declined; improvement took place in the physical signs, and the case proceeded to complete recovery.

The diagnosis of ulcerative endocarditis was based upon the seriousness of the patient's condition, the hectic type of the temperature and its persistent elevation in the absence of fresh rheumatic manifestations or increase of those present, the appearance and disappearance of the heart murmurs, and the increase in the size of the spleen. Unfortunately bacteriological examination of the blood was not undertaken until after treatment with the antistreptococcic serum had been instituted, and then no micro-organisms were found. The possibility of typhoid fever was excluded by the absence of characteristic symptoms excepting high temperature and increase in the size of the spleen. Acute tuberculosis was less closely simulated, and the outcome of the case apparently decided against this possibility, even had there been any doubt.—*A leader in the Medical Record, September* 18, 1897.

DISEASES OF THE ORGANS OF RESPIRATION.

34.—COUGH AND ITS TREATMENT.

By Thomas J. Mays, A.M., M.D.,
Professor of Diseases of the Chest in the Philadelphia Polyclinic, &c.

[The following is an excerpt from Dr. Mays' paper:]

The cough of phthisis varies with the stage of the disease. In its incipiency the cough may be very slight, and indeed be absent in some cases; but in others it is one of the earliest and most constant symptoms, although there may be very little or no expectoration. In the advanced stage of the disease cough is more or less persistent, and so long as the catarrhal element predominates it is accompanied by an abundant yellow expectoration. After the formation of cavities the expectoration is generally of a grayish colour and of tough, fibrous consistency. Cough is a reflex nervous movement, and hence it necessarily follows from a fundamental physiological law that the degree and amount of cough in any case correspond with the irritability or impressibility of the nerve-supply of the lungs. This applies more forcibly, perhaps, to the cough of phthisis than to that of any other form of lung disease, and explains why the cough of this affection not only varies very much in different individuals, but why it varies in the same individual under different bodily positions. In the very nervous phthisical individual the cough may be one of the most prominent and distressing symptoms from the beginning to the termination of the disease, while in

the insane, for instance, in whom the sensibility of the nervous system is in a great measure subdued and obtunded, phthisis goes through its various stages without any cough, and often very little expectoration. Then again, as a rule, the cough is easier when such patients sit or stand than when they lie down. This is probably due to the fact that the lying position allows more blood to gravitate to the apices, which are oftenest involved, and the increased fulness of blood thus induces greater irritability in the nerve filaments of these parts. It is also well known that patients can lie much easier on the healthy side of the body than they can on the side which is affected. This is perhaps also explainable on the score of the principle just referred to. Sleep is an obtunder of nervous irritability, hence the cough of phthisical patients, after they have once fallen asleep, is comparatively quiet during the night, but is always worse in the morning on account of an accumulation of material in the bronchial tubes during the sleeping hours. It is clear, therefore, that the cough of phthisis is largely a question of nerve irritability, and that this element must be kept prominently before our minds in the treatment of this symptom. What then are the remedies for its abatement and relief? I believe that strychnine in progressively large doses is one of the best of these; it brings the tone of the nervous system within the range of health better than anything else. If the state of the nervous system is too irritable or unstable, it increases its stability and acts as a sedative; and if this is depressed below the normal level, it increases its tonicity and restores its elasticity.

Cayenne pepper ranks very high as a diffusible stimulant in the cough of phthisis. When phthisis follows the excessive use of alcohol it is of especial value, but under these circumstances it must be given in very large doses diluted with water. In ordinary cases of cough the dose of the tincture may vary from two to fifteen drops four times a day, while in that of alcoholic phthisis I have seen doses from half to a teaspoonful, given at the same intervals, do a great deal of good. The powder may be used in doses of from one-eighth to one grain four times a day.

The liquid extract of euphorbia pilulifera and the compound tincture of benzoin in ten-drop doses, with a drop or two of chloroform, may be given in combination with the tincture of capsicum. Codeine at bedtime in doses of from a quarter to half a grain is sometimes required. Inhalation of a few drops of chloroform from a handkerchief, or of the fumes of gum camphor confined under a glass funnel, tend to quiet cough. The administration of a suppository at bedtime, consisting of from seven to ten grains of powdered asafœtida, is very quieting. Morphine should not as a rule be resorted to until the last stage of the disease.

In cavities, bronchiectasis, or bronchorrhœa, carbolic acid or

creosote may be inhaled through a respirator with benefit. The cough which persists in the morning until the cavity is cleared out may be very much facilitated by teaching the patient to bend his head as low as possible, just as if he were in the act of tying his shoes, or going on his hands and knees with the head lower than the buttocks. These positions give the law of gravity a chance in expelling the offensive cavity contents.

Cough may be excited by congestion or inflammation of the pharyngeal mucous membrane, and by elongation of the uvula to such a degree that it touches the base of the tongue. Astringent gargles of tannic acid, sugar of lead, or the spraying of the pharynx with Dobell's solution, or with a weak solution of cocaine, or excision of the uvula, are the local measures which must be resorted to in such cases. At the same time it is also important to look after the general health of the patient. On the other hand cough may come from dyspepsia, from intestinal indigestion, from constipation, from disease of the liver, from gall-stones, from worms in children, &c. In such cases attention must be directed to the organ whose functions are disordered.—*Therapeutic Gazette, June* 15, 1897.

35.—THE TREATMENT OF ACUTE PNEUMONIA.

By Dr. Arthur Foxwell,

Birmingham.

Dr. Arthur Foxwell remarks that no disease calls more frequently for active interference. A cardiac dilatation, if noted early, may be remedied by the use of strychnine, but twelve hours later it may defy all efforts. Twenty-four hours' continuance of high tension may fatally exhaust a heart which would have struggled on had this been cut short twelve hours before. Careful, repeated physical examination should be made, which need not disturb the patient, and the results of this examination should in every instance be recorded at the time in the bedroom; otherwise, says Dr. Foxwell, they lose most of their value, for it is only by the careful comparison of these results that the progress of the case can be estimated with any accuracy. Continuous rest in bed, he says, until at least a week after the crisis is the most important treatment of all. Simply to lie in bed is not enough to bring rest; if the patient is restless, every possible source or irritation must be sought for; no detail is too small for consideration. Linen sheets are preferable, as they are smoother and cooler. The head should be low and the pillows changed frequently. The room should be large and airy, the window constantly open, the light subdued, and direct sunshine

avoided; a temperature of 60° F. is the best, and this should be steadily maintained.

Light and unstimulating food is required, says Dr. Foxwell; meat is to be avoided, as also are all meat essences; milk alone is usually enough, although milk puddings with some of the various milk foods or bread and butter may often be added with advantage. If there is a great thirst and milk is readily taken, it is better to skim it, and three pints of fresh or four pints of skimmed milk a day is quite sufficient for an adult. The reprehensible practice of allaying thirst with milk is, however, says the author, only too common; it leads to giving milk at all times and with every variety of frequency, and vomiting, constipation, and anorexia result. The author advises satisfying the patient's thirst without stint at every hour of the twenty-four with plain or flavoured water, but not with liquid food. Food, liquid or solid, must be given at stated hours, and the amounts must be small and about equal. The emunctories should be kept free, for a moist skin is far less irritable than a dry one, and empty bowels unload the liver and ease the heart by lowering the tension, and the excretion of much urine means the rapid removal of inflammatory products and the dilution of the poison remaining in the body, while all this probably aids the excretion of the toxine.

The fever very frequently causes pleurisy, but this, says Dr. Foxwell, is seldom accompanied by much fluid exudation, and although the amount is rarely a source of anxiety, the pain it produces is often a serious symptom and must be energetically combated. The prompt application of from three to twelve leeches, according to the severity of the lesion (not the pain), is most successful. A cantharides blister, an inch wide and from two to four inches long, placed along the interspace in the middle of the affected region, also gives excellent results, but the after-pain is greater, and it interferes more with future examinations. Other local applications are a small ice-bag and a mustard poultice. Of drugs, says the author, aconite and antimony are the speediest reducers of inflammatory pain. Aconite in minim doses of the tincture every half-hour for twelve doses, and then every hour, often acts like a charm on the patient altogether, moistening the skin and inducing sleep; but its depressing action on the heart is extreme, and during its administration the patient should be seen every four hours at least. Antimony in doses of an eighth of a grain every hour for twelve doses, and then less frequently, is a safe and most reliable drug, and devoid of any marked effect on the heart. Morphine is practically the only sedative, and it may be given in early pleurisy—the first three days—without much anxiety; but later, especially in middle-aged and elderly people, it is full of danger.

Reactive inflammation, says Dr. Foxwell, is especially intense

in acute pneumonia, sometimes excessive, the lung becoming widely involved or hyperpyrexia ensuing. For this condition, he says, the only safe and reliable antipyretic is cold, the most comforting form of which is the cold pack. An ice-bag applied to the inflamed portion of the lung reduces the temperature more powerfully, but it is not so pleasant, and it is not easy to keep in place. Cold sponging is a very mild way of applying cold, and is more useful as a sedative than as an antipyretic. Insomnia at the onset is not uncommon; it is due to the suddenness with which the bodily functions are upset. Usually it occurs during the first night only, or at most for the first forty-eight hours. But insomnia arising during the course of the disease, or persisting from the beginning, is a very serious matter and a symptom of evil augury. It arises from the extreme irritation of the brain produced by the virulence of the poison, and is accompanied with constant restlessness, high tension, and tumultuous cardiac action. In this case the author thinks the steady application of cold is the most successful remedy, and a continuous cold pack more so than an ice-cap. Indeed, for insomnia the cold pack is much the best form of cold; the disturbance of a bath counterbalances its sedative action. The same may be said of sponging, while an ice-bag is so localised that the patient is usually conscious of its presence, and moreover the soothing effect of moisture to the skin generally is wanting. If there is great exhaustion a really hot pack forms a splendid stimulant with soothing after-effect. Morphine may be necessary; it should very reluctantly be resorted to; used thus, as a last resort it is always dangerous and, if there be chronic renal disease, often deadly. It must be given intramuscularly, for by the mouth it is most unreliable, the absorbing powers of the stomach being at their minimum; from a sixth to a third of a grain should be the dose, and to it the addition of a full dose of strychnine is very valuable, both as an aid to sleep and as a guard against the fatal action of the morphine. Alcohol alone is sometimes a good hypnotic in pneumonia, but more from its continuous administration than a single dose. It also sometimes aids the action of the morphine and strychnine.

Concerning the question of cardiac exhaustion, he continues, in all but the mild cases this has always to be considered. In any severe case it should be carefully watched for after the third day, and from the very beginning treatment should be directed toward its avoidance. Strophanthus is better than digitalis, but neither is much to be depended on. Quinine is sometimes beneficial; but the drug which is far and away the best is strychnine. This may at first be given by the mouth, but as the case grows graver, by the skin; in either way the dose is five minims of liquor strychninæ hydrochloratis every six, four, or even every two hours. Dr. Foxwell states that the best adjuvant

to the strychnine is alcohol in good quantity; from ten to fifteen ounces of whisky daily to those accustomed to it in health, and even children will take from two to six ounces with benefit in those very rare instances in which they require it. A third of the alcohol should be given in the day and two-thirds from 8 p.m. to 8 a.m., the greater part being reserved for the six hours between midnight and 6 a.m. If the patient is an abstainer, from three to six ounces of whisky may be enough; if he is a chronic drinker, he should be given some throughout the illness, for, the author says, he fails to see the logic of removing a man's accustomed stimulant at the moment a sudden and severe shock has overtaken him.—(*Treatment, August* 26, 1897).—*Abstract in the New York Medical Journal, September* 18, 1897.

36.—FETID EMPYEMA.

By Samuel West, M.D.

In fetid empyema the fluid has an extremely fetid, sickening stink, such as is met with in gangrene of the lung or in fæcal abscess. It is dirty green or brown in colour, opalescent, turbid, with a pulverulent sediment, and contains more or less altered blood. Microscopically, there are found many red blood-cells, pigment granules, fatty crystals, or plates of cholesterin.

Micro-organisms are numerous, and of many kinds, *e.g.*, proteus, leptothrix, bacterium tetragenes, bacillus of malignant œdema, spirochæta denticola (the spirillum of saliva), bacterium coli comunis, the long and thin bacillus of Löffler (diphtheria), and others. With these may be associated other organisms which do not cause putrefaction, *e.g.*, the pneumococcus, streptococcus, staphylococcus, actinomyces, &c.

The cases of fetid empyema fall into two groups. In the one it is consecutive to putrefactive or gangrenous inflammation in the neighbourhood of the pleura, and in the other it is of spontaneous or primary origin.

Group 1.—When there is gangrenous or putrefactive inflammation near the pleura, the consecutive empyema may be fetid, though not necessarily so. Thus it is the rule with gangrene of the lung, but rare with other lesions of the lung, even with fetid bronchiectatic or other cavities; if it occur with a pneumonia, the pneumonia must be of a septic, and not a simple character. It may also follow caries or necrosis of the bones of the thorax, but usually the resulting empyema is not fetid. It is especially likely to occur where there is a perforating disease of the digestive track, as in connection with stricture of the œsophagus, ulcer of the stomach, or with any fæcal abdominal

abscess which has reached the neighbourhood of the diaphragm, or where there are lesions in the lung or liver which are likely to become gangrenous, as, for instance, a suppurating hydatid cyst. In this group the symptoms, prognosis, and treatment depend chiefly upon the primary disease. The symptoms are asthenic in type. The patient is in a state of profound prostration, with low, muttering delirium, a feeble pulse, and dry tongue, and soon passes into the typhoid state. If the primary disease, as well as the empyema, cannot be relieved, death must be the result.

Group 2.—In the second group, that is to say, where the fetid empyema is primary or of spontaneous origin, and not connected with any other putrefactive lesion, the conditions are entirely different. It seems that nearly one-half of all the cases of fetid empyema belong to this group. Of twenty cases which Netter examined, seven were due to gangrene of the lung, five to pyemia, and eight could be attributed to no cause at all—*i.e.*, they belonged to the primary group. Schwartz's results are much the same; of fifteen cases, nine belonged to the primary group and six to the secondary. In most of these cases the pus is fetid, however early in the attack it may be examined, so that it is probably fetid from the commencement. It is true that sometimes a simple empyema may become fetid after operation, but this is quite a rare event, and as a rule it is the exact contrary which occurs; for as soon as the fetid empyema has been opened the fetor passes off and the pus becomes sweet. I do not know that there is anything in the symptoms of the case by which the fetid nature of the effusion may be diagnosed beforehand. I am inclined to think that in this group the empyemata are generally localised; at any rate, this has been so with those that I have seen. The prognosis seems to be neither better nor worse than that of ordinary empyema. The treatment is the same, except that as soon as the empyema is known to be fetid, the sooner an operation is performed and the fetid pus removed the better. It appears to be desirable at the same time to thoroughly wash the side out, and, if necessary, to repeat the irrigation as often as the fetor returns. A single washing out is often sufficient, and the fetor may then pass off very rapidly, even in a day or two. I have seen several of these empyemata burst through the lung, and then the diagnosis from a gangrenous cavity in the lung becomes very difficult, if not impossible. The expectoration of a fetid empyema is, however, no more likely to cause secondary changes in the lung than a simple empyema, and in most of the cases that I can recall complete recovery has taken place without any complication. I have seen unusual complications follow fetid empyema once or twice. Thus, I remember the case of a young lady who had an empyema, the fetid nature of which was not known until the side

was opened, when the stench was so overpowering as to turn the surgeon sick. The case, however, ran its ordinary course, except that shortly after operation the patient developed a severe diphtheritic inflammation of the conjunctiva, which ultimately destroyed the cornea, and necessitated the excision of the eye. In other respects the case ran the ordinary course, and ended in complete recovery.—*St. Bartholomew's Hospital Reports*, Vol. xxxii., 1897.

37.—TRACHEAL INJECTIONS IN THE TREATMENT OF LARYNGEAL AND PULMONARY INFLAMMATIONS.

By J. A. Thompson, M.D.,

Cincinnati, Ohio.

[The following is from Dr. Thompson's paper:]

By the method of intra-tracheal injection we get the direct local action of the medicines on the diseased areas. In bronchi ectasis, no medicine given by the mouth will prevent the decomposition of the secretions in the dilated bronchi. The odour and the absorption of septic material from them can not be controlled. A few tracheal injections will usually disinfect the cavities so that the odour disappears and the temperature becomes normal. It is possible by intra-tracheal medication to produce a rapid and prolonged general effect. You can produce as rapid an effect, and one much more durable, by injecting into the trachea medicines which volatilise slowly at the temperature of the body. Where a dose of menthol had been given in this way you will find the surface flushed in five minutes; the cold extremities have become warm, and sometimes the patient breaks out in a profuse perspiration. This stimulating action lasts for hours. Medicines used by tracheal injections are not changed by passing through the digestive organs into unknown compounds. For this reason we can be more certain of their action. No one would think of treating a tubercular laryngitis by internal medication alone. There is just as much reason for applying medicines of known beneficial, local action, directly to the lungs, as there is for using them in the larynx. Where medicines are injected directly into the trachea they have no deleterious effect on the organs of digestion. Our valuable expectorants, such as are used in acute and subacute catarrhal diseases, act injuriously on the stomach and intestines. The name of one class, nauseating expectorants, testifies to the universal recognition of this fact. The cure of a bronchitis by direct medication without interfering with nutrition is an advance in therapeutics. Direct antisepsis can be secured by

local medication. It is not possible to obtain this result by remedies given internally. In cases where tracheal injections can be tolerated, the antiseptic action of the remedies chosen will be very speedily shown by the subsidence of the cough, by change in the character of the expectoration, and by the decline in the fever. The administration of medicines by intra-tracheal injection does not interfere with any other line of treatment. Diseases in other organs may be treated or tonics given, while local treatment of the lungs is being used, without any incompatibility. Where medicines are given by the tracheal rather than by the œsophageal route, we can relieve symptoms in hopeless cases without narcotics. We thus avoid their bad effects on nutrition. We also escape their secondary depressing action on the nervous system. A little menthol injected into the trachea will quiet a cough longer and more effectually than will a quarter of a grain of morphia given hypodermically. Conditions not affected by constitutional medication can be cured by tracheal injections. Gummata in the lung, which resisted all other treatment, have been cured quickly and easily by direct medication of the suppurating cavities.

There are several conditions necessary for success in this method of treatment. The first essential is that the doctor himself be skilful enough in laryngology to do the work rapidly and delicately. The patient must possess a reasonable amount of self-control and be willing to follow directions implicitly. It is probable that the medicines used for this treatment should be such as volatilise slowly at the temperature of the body. They should be soluble in the vehicle employed. The solutions used should not be too irritating. The most serviceable solutions are menthol, 2 per cent.; guaiacol, 1 per cent.; creosote, 1 per cent.; camphor, 2 to 3 per cent. Any of these may be combined. In acute diseases the menthol and camphor solutions are most efficient. In tuberculosis menthol and guaiacol give the greatest relief. Guaiacol gives good results in any septic condition in the lungs or bronchi. The vehicle used should be one of the light petroleum oils or olive oil. Alcohol and water are too irritating and produce violent coughing. There is ordinarily no spasm, and but little cough or distress after an injection of the above solutions. The dose is from one to four drams. The diseases in which intra-tracheal medication will be of service must be determined by clinical observation.

I wish to present only a few deductions from my experience with this method of treatment during the last five years. The necessary condensation may make my statements seem too dogmatic. All are based on cases actually treated, and are deductions drawn from results thus obtained. My first notable success was in pulmonary tuberculosis. In August, 1892, I began treating a woman with every symptom of this disease. Her

attacks of coughing were so prolonged and violent that she frequently vomited and was unable to sleep at night. An injection of a solution containing menthol, 2 per cent., guaiacol, 1 per cent., at four o'clock in the afternoon would control the cough so that her dinner would be retained, and she would get a good night's rest. The cough did not return, as a rule, until the following morning. The patient's symptoms entirely disappeared and treatment was discontinued. A little more than a year after she ceased treatment she became pregnant, and with the digestive disturbances incident to this condition, there was a return of the cough, vomiting, and inability to sleep. The treatment by tracheal injection was resumed, again resulting in apparent cure. The pregnancy was uninterrupted, and the patient has had no further occasion for treatment during the last four years. In other cases of pulmonary tuberculosis, symptoms have been greatly relieved. A few cases that I have seen, where the tubercular disease was making very slow progress, have not been benefited by tracheal injections. Where the diseased process is a chronic, not an acute one, the symptoms have been aggravated by the remedies used.

My next notable success in this treatment was in pulmonary syphilis. I have recently seen this same patient, and there has been no recurrence of the trouble at the site of the original lesion.

In the first stage of acute bronchitis, where there is no secretion, tracheal injections have proven irritating. I have abandoned them at this stage, and given something to induce free sweating instead. In the second stage, after free secretion has been established, intra-tracheal injections of menthol and camphor will relieve the cough more than any other treatment, and daily injections will shorten the attack at least one-half, as compared with cases treated by a stomach medication. In chronic bronchitis there is no comparison between the two methods of treatment. The results are so much more rapid and satisfactory by intra-tracheal medication, that no patient who has once been given this treatment is ever willing to continue internal medication.

There is a condition rarely mentioned, often associated with chronic diseases in the upper air passages, which gives rise to many of the symptoms that we attribute ordinarily to chronic laryngitis. This is chronic catarrhal inflammation of the mucous membrane of the trachea. You will also frequently find in cases of acute bronchitis that the trachea remains inflamed, as can be seen by laryngoscopic examination, after all the physical signs of bronchitis have disappeared. This is especially true of cases where there is chronic rhinitis and laryngitis, as the underlying cause of the acute attack. This chronic inflammation of the tracheal mucosa gives rise to more or less cough and a feeling of soreness, and sometimes to distinct pain in the chest. Physical

examination in this condition shows no signs. It can only be detected by direct examination of the trachea, either by the laryngoscope or by the autoscopic method. Where this tracheal inflammation is coexistant with a chronic laryngitis, the ordinary treatment for laryngitis will fail unless combined with tracheal injections for the cure of the disease of that organ. Stimulant expectorants, given internally, have little influence on the course of a tracheal inflammation. Direct local medication ordinarily results in a very speedy cure. Some cases of asthma are notably relieved by tracheal injections. The paroxysm is relieved for hours after the treatment. The bronchitis which usually accompanies this condition, is cured more speedily by direct medication than by internal treatment. Some cases of pulmonary emphysema have been given great relief by tracheal injections. The effect was probably obtained through the cure of the chronic bronchitis which usually accompanies this condition.

Where the remedies to be used are not irritating, it is not necessary to spray the larynx with cocaine. The injection can be given while the patient takes a slow full inspiration. The process can be repeated until a sufficient dose has been administered. Where strong solutions or those irritating to the larynx are to be employed, that organ must be anesthetised. The tip of a properly curved tube of a syringe is then introduced between and below the vocal cords, during inspiration, and the whole dose given at once. To an expert laryngologist there are a few technical difficulties in the treatment. There are none which need discourage the family practitioner and prevent him from attempting it.—*Journal of the American Medical Association, June* 26, 1897.

38.—AEROTHERAPEUTICS AND HYDROTHERAPEUTICS IN THE TREATMENT AND PREVENTION OF PULMONARY TUBERCULOSIS.

By Dr. S. A. Knopf, of New York.

Dr. Knopf (*New York Medical Journal*, July 24, 1897) expresses doubt whether we shall ever have a serum or tuberculin, which in a few weeks, will be able to destroy the countless bacilli which result from a tubercular process which has been in progress for months. We may, he says, employ serotherapy in an acute exacerbation due to an association of microbes; but to heal a tuberculous lesion we must produce new tissue—we must feed our patient, and feed him well. The judicious employment of aerotherapeutics and hydrotherapeutics constitutes an excellent means of increasing his appetite and his powers of assimilation.

It seems evident that insufficient air supply to the respiratory organs, and increased susceptibility to the slightest change of temperature, are the principal factors in the production of consumptive individuals. To prevent or improve the condition caused by an insufficient air supply we must resort to aerotherapeutics, and to arouse the vaso-motor system to a more energetic action we have in hydrotherapeutics, not the only therapeutical agent, but, considering the salutary secondary effects, the most valuable one. Quite young children may get the advantages of the air-bath and sun-bath, by running about naked every day for a little while, in cold weather, in well-warmed rooms, and in summer in the room bathed by the rays of the sun. They will thus become less susceptible to colds than if always carefully bundled up. Breathing exercises may be taught as soon as the age and intelligence of the child will permit. Hydrotherapeutic measures may also be commenced at an early age. A child a few months old can support with impunity a rapid sponging off with cold water, followed by a relatively vigorous friction with a soft Turkish towel, after its warm bath. For anæmic individuals, who are in general candidates for consumption, a graduated course of hydrotherapeutics seems to act almost as a specific. There is never any danger from a judiciously applied affusion or douche; all that is necessary is to assure a proper reaction. The best time to take the hydrotherapeutic application is in the morning, half an hour or so after a very light breakfast.

Dr. Knopf recommends the following respiratory exercises to the chronic tuberculous patient able to walk about, to the anæmic, the predisposed, and to all children and adults who breathe faultily. The patient is taught to stand properly, and to breathe always through the nose. He takes a deep inspiration slowly while raising the arms from the sides to a horizontal position, holds the breath for a moment, and lowers the arms during the expiration, which should be somewhat more rapid. The second exercise is like the first, except that the upward movement of the arms is continued until the hands meet about the head. In the third exercise, the patient stretches his arms out as in the position of swimming, the dorsal surfaces of the hands touching each other. During the inspiration the arms are moved outward, and finally meet behind the back. They are brought forward again during the expiration. Each respiratory act should be followed immediately by a secondary forced expiratory effort. This is for the purpose of expelling as much of the supplemental air as possible, and may be effectually aided by supinating the arms and pressing the thorax with them.

To consumptives who have the habit of stooping, Dr. Knopf teaches an additional exercise as follows:—The patient makes his best effort to stand straight; he places his hands on his hips,

with the thumbs towards the front, and then bends backwards slowly as far as he can during the act of inspiration. He remains in this position a few seconds while holding his breath, and rises again somewhat more rapidly during the expiration. For all patients alike the rules hold good never to take their breathing exercises when tired, or immediately after a heavy meal; never to continue them to the extent of becoming tired; never to take them in a bad atmosphere; and not to take them at their caprice, but according to the directions of the physician.

[N.B.—Simple gymnastic exercises, such as those here described, are most useful in those who are predisposed to consumption, and in early cases of tubercular disease of the apex. I have been accustomed for many years to recommend such exercises, and am convinced of their utility.—J.E.S.]—*Dr. J. E. Squire's abstract in Treatment, October* 26, 1897.

39.—THE HIGH ALTITUDE TREATMENT OF TUBERCULOSIS.

[The following is an abstract of a paper and discussion at the International Medical Congress in Moscow:]

Dr. von Ziemssen said that really only two methods of treatment remained to be considered, namely, tuberculin and climate. In regard to the first, the "specific" treatment, there is little to say. Koch's old tuberculin has been forgotten, the value of the new has not yet been proven, and most people already doubt its efficacy. In speaking of tuberculosis, he said, he meant particularly pulmonary tuberculosis; other forms, such as lupus, have without doubt been cured, but for the pulmonary form, the most frequent and therefore the most serious, nothing really has been done. The complexity of the lesions make a cure by means of a specific seemingly impossible. Other forms have their specifics, for tuberculin will often cure lupus, and iodoform will cure tuberculosis of the joints, but as yet we have no specific for tuberculosis of the lungs. There remains therefore only the climatic treatment. As far back as we can see in the history of medicine, fresh air has been one of the requirements in the treatment of tuberculosis, but it is only of late that the advantage of high altitudes, at least for many cases, has been clearly demonstrated. That tuberculous patients can get a quantity of fresh, pure air in these regions is evident to any one visiting the places. On the mountains in the centre of Europe, mountains covered with snow during the entire winter, one can see patients sitting in the sun drinking their morning coffee, with snow all around them, yet the sunbeams are so warm and pleasant that they are perfectly comfortable. But the fresh air that surrounds them is not all; the altitude

brings about an excitation of the blood-making organs that increases the corpuscular elements in the blood. Even in health this reaction takes place, but not so markedly as in diseased states. There are contraindications to high altitudes which prevent us from sending all patients there. A tuberculous patient with fever should never be sent to a height, for he will certainly become worse and the fever will be increased. Almost always patients without fever do well, though they sometimes find it difficult at first to acclimatise themselves. If the fever is due wholly to the presence of bronchitis or pleurisy, it does not act as a contraindication. The best results are obtained when the patient is sent to a place near his own home, for a long journey is always depressing, and the comfort of seeing friends, especially to a sick man, is very great. The stage of the disease must be taken into account in deciding this matter. If the case is much advanced, the patient should be kept as near home as possible. Dr. Ziemssen took up the subject of sanatorium treatment for the poor. He feared the number of the rich is too few to build sanatoria for all the world, but that should not paralyse all effort, for every case cured and every case isolated are steps toward the conquest of the disease.

Dr. Senator said that his personal experience with tuberculin had not been very extensive. He had tried it carefully in a dozen cases, but without good results. In a few it seemed to moderate somewhat the fever, but in the others it acted as poison. He was convinced that the only treatment of value was the climatic, and he believed high altitudes were often of especial value. He did not believe that good was done by increasing the number of red corpuscles, because he had seen more than one case in which elevation had no visible influence on the corpuscular elements of the blood, and yet the patient improved. He agreed with the reader of the paper that the principal contraindication to high altitudes was fever, for there is great danger in such cases of hæmoptysis. Nevertheless some cases of hæmoptysis without fever (when the hemorrhages are slight) do well in these regions. He regarded altitude as a factor second only in importance to fresh air. Sunlight is also of great value, and the sun's rays themselves exert a particular influence. Pharyngeal and laryngeal cases do not improve, and in fact always becomes worse, so that Dr. Senator regarded such complications as a positive contraindication to the high altitude treatment of pulmonary tuberculosis.

Dr. von Leyden said that in his hands the specific treatment had failed, and he did not believe there could be any sure success with tuberculin. The specific may come, but we cannot wait for it. So far the only treatment that has given any positive success, he said, is the climatic. His best results had been obtained in the mountains, but the place and its climate

must be selected to suit the individual patient. A patient should not be sent far from home, for the nearer he is to friends the more comfortable and contented he will be, and the better, as a rule, will be the results.

Dr. Körnig, of St. Petersburg, said that he had found an increase in the red blood cells in patients who had gone to high altitudes, and he was inclined to attribute to this increase, a large part of the benefit derived from a stay in these mountain sanatoria.

Dr. Dehio, of Dorpat, said that observations of the sanatoria in Russia, for instance, Hallila in Finland, and Lindheim in Livonia, have shown that the climatic peculiarities of the Russian winters have an effect on tuberculosis very similar to that of high altitudes.

Dr. Jarvein, of St. Petersburg, reported the results of a trial of tuberculin in the clinic of Professor Janowsky in the military academy at St. Petersburg. It was tried in eight cases, five of which were very mild and in the first stage. They began with one-five-hundredth of a gram and increased daily to one milligram. At first the patients showed no reaction to the drug, but when the dose of one-fiftieth to one-twenty-fifth of a milligram was reached, the temperature began to rise to from 37·8° to 38·5° (100° to 101·3° F.), and after two weeks three of the patients began to have hemorrhages. From this time (after two weeks), five patients began to grow steadily worse, and by the end of two months it became absolutely necessary to stop the use of the tuberculin. The three other cases were complicated with fever. The reaction occurred sooner and the rise of temperature was greater. The last case was that of a physician with tuberculosis of the pharynx. In the beginning he reacted feebly, so that the dose was gradually increased to three milligrams. Then appeared some fresh miliary tubercles, the temperature rose quickly to 38° to 39° to 40° (100·2°—104° F.), and in three months he died with all the symptoms of general miliary tuberculosis. After listening to the greatest authorities in Europe on the treatment of phthisis in sanatoria, the speaker thought that there can be but little doubt left in the minds of those present, that this is, at present, the only mode of treatment; and as to the question of sanatoria for the poor, he was sure that there were in Moscow and all over the world, many rich men who would be willing to give generously for such a purpose, if it was properly presented to them on the authority of the International Medical Congress, that such was the only method of treatment. —*Medical Record, September* 11, 1897.

40.—TWO CASES OF INTUBATION IN ADULTS.

By Harold F. Mole, F.R.C.S., Eng.,

House Physician, Bristol Royal Infirmary.

[The following is taken from Mr. Mole's paper:]

The necessity for intubation of the larynx in adults, arises sufficiently seldom to make it worth while recording the two following cases, occurring within a short time of each other:—

Case 1.—M. S., aged 40, female, was admitted to the Bristol Royal Infirmary on February 12, 1897, under the care of Dr. Shingleton Smith. She was suffering from considerable dyspnœa and pain in the larynx with troublesome cough, and her voice was reduced to a hoarse whisper. Three weeks previously she had caught cold, her voice not becoming affected, however, until a week later; but for the past week the difficulty in breathing had gradually increased. There was slight pyrexia ranging from 99° F. to 101° F. She was treated, on the assumption that the laryngeal affection was of an inflammatory nature, by leeches to the throat, diaphoretics and steam tent. Notwithstanding this the patient's symptoms got steadily worse, paroxysmal attacks of cough with urgent dyspnœa accompanied by inspiratory stridor occurring frequently; and on the second day after admission the urgent distress of the patient necessitated immediate relief to the breathing. It was decided to attempt intubation, and this was performed with some difficulty after several unsuccessful attempts, considerable force having to be used to get the tube (the largest of O'Dwyer's set of six) through the stenosed glottis. The throat had been previously well cocainised Considerable cough was at first caused by the presence of the tube, but later, when the patient got accustomed to it, great relief was obtained. The tube was worn for two days, during which time the patient had to be fed by nutrient enemata, as any attempt at swallowing food, either by gulping or by suction through a tube, caused a violent attack of coughing. After removal of the tube the breathing remained fairly easy, but the voice was still very husky. This was a case of cricoid perichondritis, as evidenced by the swelling outside the aryteno-epiglottic fold and projecting below the glottis; there was also pseudo-ankylosis of the left arytenoid cartilage at the time the intubation was performed. The condition was probably due to cold, of which there is definite history, no evidence of syphilis being obtainable; and it appeared to be getting well without suppuration or necrosis of cartilage, which is such a common termination of these cases.

Case 2.—J. N., aged 45, male, was admitted in the early morning of March 15, 1897, under Dr. Shingleton Smith. He was suffering from extreme inspiratory dyspnœa, with sucking-in of supra-sternal and supra-clavicular regions. He was livid and covered with a clammy sweat, and his face was expressive of the greatest anxiety. There was considerable stridor, but no laryngeal excursion. He was only able to utter a few words at a time, and those in a hoarse whisper. Two days previously he had noticed "a cold in his throat," which got worse as the day went on, and during the night his breathing became difficult. Next day he consulted a doctor, who gave him a gargle, but his breathing continued to get worse until he came to the Infirmary. As the diagnosis of the case was uncertain, a little time was expended in trying the effects of sedative draughts—cocaine spray and inhalation of nitrite of amyl: these, however, failed to give any but the slightest relief; and as he was gasping for breath it was decided to try

intubation, and, failing this, laryngotomy or tracheotomy. The largest of O'Dwyer's tubes was inserted easily, with immediate and complete relief to the distressing symptoms. Ten minutes later, however, the patient coughed up the tube, notwithstanding that it appeared to have been well placed in position, and the symptoms returned at once. This occurred a second time; but on a third time inserting the tube the throat was well sprayed with cocaine to lessen the cough which immediately followed, and the patient retained the tube until the following morning (eight hours), when he again coughed it up. Although considerable dyspnœa remained, it was not enough to necessitate the use of the tube again. The condition of the larynx after expulsion of the tube was as follows:—The cords are very red and only abduct to a very slight extent; there is some subglottic swelling. After examination of the larynx, the patient was put in a steam tent, two leeches applied to the front of the neck over the larynx, and ammonium acetate given. His breathing remained very bad for a week; but five days after that he was sufficiently well to be made an out-patient, the condition of his larynx during deep inspiration being as follows:—The left cord more movable than before. The right cord fixed by pseudo-ankylosis of arytenoid cartilage. The right vocal process showed pachydermia with corresponding depression in the opposite cord. An examination of the larynx on April 24 showed that it had almost completely recovered; the right cord, however, failed to reach full abduction, and there was still a little pachydermia remaining. This case was probably an acute septic laryngitis; and the glottic obstruction at the time the intubation was performed must have been extreme, as after the tube was left out—the breathing being then much better—but a small chink remained. The pachydermia may be accounted for by the fact that the man was a heavy smoker, and his occupation—a cattle drover—necessitated an excessive use of the voice.

Intubation in adults may be a simple or difficult operation, as evidenced by these two cases. Apart from the condition existing in the larynx itself, the ordinary difficulty is due to the distance from the teeth to the glottis, rendering it awkward for the guiding finger to conduct the tube to its right position. This is materially aided if, at the moment the tube has cleared the epiglottis, the assistant holding the gag be requested to depress the head forwards a little, when the tube will then pass down into the larynx. With regard to feeding in these cases, some nervous patients may require nutrient enemata all the time, as occurred in the first of these; but most patients will be able to feed themselves by sucking up fluids through a glass tube, the head being placed low or on one side, as happened in the second case, or by taking some fluid into the mouth and gulping it down over the larynx. There cannot be many conditions in which intubation in the adult will be indicated. It is only of use in temporary conditions to tide over a crisis. It will not find its application in such conditions as tubercular or cancerous disease of the larynx, and in but very few syphilitic or paralytic conditions; whereas catarrhal laryngitis and diphtheria but rarely give rise to sufficient obstruction to necessitate interference.—*Bristol Medico-Chirurgical Journal, September*, 1897.

DISEASES OF THE ORGANS OF DIGESTION.

41.—HYSTERICAL DYSPHAGIA.

[The following is taken from a paper read by Dr. A. Coolidge, of Boston, which was followed by a discussion:]

Hysterical aphonia is always suspected and has its clinical identity, but this is not the case with hysterical dysphagia. Most cases which have been observed have been reported as œsophageal spasms. Mackenzie reports several cases, and believes it to be due to a gouty diathesis. Although many cases of hysteria and spasms may be identical, still it must be remembered that the latter may be the primary symptom of a malignant disease. This condition is more frequently met with in women than in men, and it sometimes occurs during pregnancy. There may be pain and a sense of constriction at the cricoid cartilage, and *globus hystericus* may be present. The onset is usually sudden. The patient may present a weak and anæmic appearance from lack of food. In many cases the difficulty seems to be referred more to the pharynx than to the œsophagus. Recurrence may take place from a renewal of the exciting cause. In the diagnosis the laryngoscope may exclude pathological lesions. In the treatment, the patient should be assured of relief, and the passage of bougies gives good results. Care should be taken in using electricity in these cases, as death has resulted from irritation of the vagus. Hysterical dysphagia may result from a mental impression, following the irritation due to the swallowing some irritating substance, which, however, has disappeared. This affection may be defined as an inability to swallow without cause, and due to hysteria.

Discussion.—Dr. Thos. Hubbard stated that these cases are difficult of diagnosis; sometimes they are of inflammatory and not of nervous origin. He recalled two cases in which the irritation was due to swallowing potatoes. In one case the patient had been unable to swallow liquids for two days. There seemed to be a constriction at two points of the œsophagus, a sac forming between them from which the liquids were ejected.

Dr. John H. Lowman reported a case in which bougies had been passed without benefit, and in which the symptoms became constantly aggravated. Believing it to be of hysterical origin, he used a spray as a placebo, and told the patient that it would result in a cure. The patient could then swallow without difficulty. A second case, in which there was difficulty in swallowing and breathing, had been diagnosed as of hysterical origin by a surgeon who had passed a sound, and told the

patient to eat. The patient died three or four days later, and it was found that the difficulty was due to an aneurism, and that the surgeon had probably perforated the œsophagus in his efforts to pass the obstruction. He recalled another case in which an aneurism fortunately opened just before the arrival of the surgeon, who had intended to pass an œsophageal sound. From these cases Dr. Lowman admonishes care in the use of sounds in such conditions. Even the passage of stomach tubes has resulted in death in three cases. In a case coming under his observation, the tube was passed without difficulty, but the patient gradually became weak, and in twenty minutes was dead. Cocaine renders the use of the sound much easier, and it should always be used.

Dr. Gleitsmann referred to a case, which he had already reported, in which there was marked dysphagia. No cause was found except a very large lingual tonsil, which was cauterised, and resulted in a cure of the difficulty of swallowing. The probability is that this was of hysterical origin, and that the cauterisation had cured by the mental impression which was made.

Dr. Emil Mayer stated that it is important to make a correct differential diagnosis in these cases. In one case which was reported as hysterical, it was found eventually to be a case of congenital constriction of the œsophagus. This diagnosis was made by means of auscultation. He called attention to the importance of this method, and stated that it should always be practised before the bougie is used.

Dr. Langmaid said that many of these cases are anæmic, the dysphagia being without intermissions, and frequently lasting for years. There seems to be no cause except the anæmia. Some of these cases are simply unable to swallow solids. He has watched such cases for twenty years, and if there had been any malignancy it would have developed. His treatment, besides removing the cause where practicable, is to pass the bougie, using all care and precaution, and each case was benefited. Whenever the attack recurs, he again passes the bougie, which is sometimes sufficient for a year or two.

Dr. W. H. Daly stated that the best method of treatment is the rest cure, and, if necessary, feeding the patient by a tube. After keeping the patient secluded for three to four weeks, a cure results in nearly all cases.

Dr. A. Coolidge, in closing the discussion, stated that dysphagia is of hysterical origin, not simply where the cause cannot be found, but where it does not exist. Hysterical dysphagia should be recognised as a clinical entity as well as hysterical aphonia. In answer to Dr. Hubbard, he stated that where the lingual tonsil gives rise to irritation it is usually reflex, as there is rarely an actual obstruction. In most cases,

the onset of the disease, like the cure, is sudden. He also hesitates to use the bougie in these cases, as there is always a possibility of breaking up a malignant growth and causing hemorrhage. He does not think that the lingual tonsil is as often at fault as would be inferred from the remarks of Dr. Swain. When there is an irritable cough, the lingual tonsil should be watched. If the cure results from an application to the lingual tonsil, it is not usually due to a removal of the cause, but simply that something active has been done, and the benefit is through suggestion. He has seen cerumen give rise to a reflex cough, but not to dysphagia. Among exciting causes for dysphagia may be mentioned hydrophobia. Where there is anæmia in cases of dysphagia, it is usually the result and not the cause.—*The Laryngoscope*, 1897, *p.* 372.

42.—GASTRIC DYSPEPSIA.

By Elbridge G. Cutler, M.D.,
Boston.

[The following is taken from Dr. Cutler's remarks on diagnosis and treatment:]

It is especially the symptoms of eructation, formation of acid and pain in gastric dyspepsia, which are often very difficult to interpret. In eructations, as a rule, only gas comes from the stomach, more rarely with the gas portions of the solid or fluid gastric contents come up also. Increased production of acid in the stomach, and the sensation of heartburn dependent on it, may have a twofold cause: either increased secretion of hydrochloric acid, hydrochloric hyperacidity of the gastric juice, or increased formation of organic acids in the stomach. In the first case we have either increased irritability of the nerves of secretion, or gastric ulcer and the gastric contents irritating the ends of the secretory nerves exposed in the base of the ulcer. The increased formation of organic acids in the stomach depends on abnormal fermentation during gastric digestion. Perfectly healthy persons, who produce a good gastric juice, and whose gastric motility is sufficient, may at times be plagued by heartburn caused by organic acids. In such cases something eaten is at fault; the food has been too fat, as fried food, meat, or cereals, perhaps mayonnaise dressing, or food and drink undergoing the acid fermentation, whipped cream, sour cream, new beer or wine, and so forth. There is reason to believe that here the fat and fat acids remaining in the stomach give rise to the trouble, and, as already mentioned, a drink of spirits, as brandy or whiskey, will probably clear out the stomach the

quickest, but it is to be very seldom employed for this purpose for obvious reasons. The acids which do not come from fats are soonest removed from the stomach by a glass of simple water, weak alkaline water, or a cup of weak tea.

In patients suffering from chronic dyspepsia a hyperacidity of the gastric juice due to organic acids may develop even when there has been no dietetic error, as the result of atony, the stomach not emptying itself soon enough, and the food therefore remaining too long in the organ. Here the ferment organisms already present, or taken in with the food and saliva, have time to develop their activity. The fermentation process, moreover, is favoured by a weak gastric juice, that is, one poor in free hydrochloric acid, as it does not sufficiently inhibit the pathological fermentations. If, however, there is good or increased gastric motility, such patients do not complain of heartburn, but of intestinal discomfort; so that instead of a gastric trouble, one thinks he has to deal with an intestinal difficulty.

Over-abundant secretion of hydrochloric acid is to be treated as in gastric ulcer and neuroses of secretion. A tumbler of cool water should be given early in the morning on an empty stomach. The diet should be restricted to milk, eggs, white meat, easily digested cereals, and vegetables and fruit. Usually more than the three stated meals are indicated. Symptomatically alkaline spring waters, lime-water, and calcined magnesia can be used to neutralise the acid. Of the former, Fachinger, Bilin, Vichy, and Vals are much used in Germany, a tumblerful of either of the first two, and a wineglass of either of the last two, a quarter of an hour before each ordinary meal. Alcoholic drinks should usually be interdicted and all condiments. Jaworski, Ewald, and Hyem claim that sulphate of sodium has the property of reducing the rate of secretion of hydrochloric acid, and the latter author claims that the use of Carlsbad water may lead to the total disappearance of hydrochloric acid. He gives a small quantity of sulphate of sodium or of Vichy water every morning before breakfast. The chief thing is to reduce to a minimum the direct or indirect stimulation of the gastric mucous membrane. An objection which has been urged to the continued use of bi-carbonate of sodium is, that it becomes chloride of sodium in the stomach, which is a great excitant to the secretion of hydrochloric acid. In severe cases the stomach should be systematically washed out before breakfast as well.

The treatment in the increased production of the organic acids is that of chronic gastric catarrh and gastric atony. As there is usually much secretion of mucus, this is to be removed either naturally by giving water to drink early in the morning, or artificially by washing it out by means of the stomach-tube. By the former or natural method the mucus is washed on into the

intestine, where, under certain circumstances, it can cause harm. By the latter or artificial means the mucus is directly discharged from the body. In all severe cases the artificial means is preferable to the natural because it is more thorough. The natural means is indicated in slight cases or in the subsequent treatment of severe ones already benefited and nearly cured by the washing process. Since mucus is not readily soluble in ordinary water, we usually add an alkali to it when we wash out with the stomach-tube. Experience teaches that a mixture of table salt and soda in the proportion of two to one is the best. The ordinary formula is chloride of sodium two parts, carbonate of sodium one part, of this a heaping teaspoonful is added to two or three quarts of water at 90·5° Fahr.

For drinking-waters there are many to choose from, for all the alkaline-saline and saline waters are proper to use. Among these are Carlsbad, Marienbad, Bilin, Saratoga Hawthorne Spring, Kissingen, Hamburg, Soden, and Saratoga Congress. A diet of milk, different cereals with milk and eggs, gruels and purées is best to begin with and is gradually increased.

Pain in the stomach when there is no decided structural change of the gastric wall—as hemorrhagic erosion, ulcer, or carcinoma—present is most frequently caused by spastic contractures at the gastric ostia or by excessive distension of the stomach. In spasm of the cardia, true cardialgia, the location of the severest pain is behind the tip of the xyphoid cartilage in the pit of the stomach, and even higher up in the chest between the sternum and vertebræ, corresponding to the position of the œsophagus. Since frequently no distinct cause can be found for this pain, and because it occurs suddenly and unexpectedly, and after a shorter or longer time disappears just as suddenly usually after a few eructations, it is for the most part regarded as nervous. Nevertheless, such a cardialgia may very frequently be referred to purely mechanical causes. G. von Sweiten maintained the opinion that, in rapid over-distension of the stomach, the orifices of the same were convulsively closed tight, and that such a closure could as well be the result as the cause of a painful gastric cramp. Furthermore, Fleiner calls attention to a bulging of the œsophagus, which is frequently found partly above and partly below the diaphragm, which is bounded above and below by a narrowing, and which he calls a vormagen or antrum cardiacum. Gases, sometimes also acid gastric contents, rising from the stomach or coming from the œsophagus, particles of food swallowed, caught in such an antrum cardiacum, become incarcerated and then give rise to troublesome pressure under the sternum, which usually disappears after one or two belchings. Fleiner also says that the escape of gas through the mouth may be rendered difficult, in a purely mechanical way, without either spasm of the cardia or antrum cardiacum, by the powerful

traction on the œsophagus or a downward displaced and well-loaded stomach, or by a kink in the œsophagus when the fundus is pushed up or displaced to one side. Spasms of the pylorus, like spasm of the cardia, may be the result of undue distension of the stomach. It is, however, more often the cause of distension, because the sphincter of the pylorus can wholly close the opening and stop the exit of the gastric contents into the intestine. Also solid food may be temporarily held fast by it at the moment of its passage through the pylorus. Spasm of the pylorus is stronger than that of the cardia, because the muscle is here in greater development. Trousseau was the first to claim that half the so-called gastralgias were located in the intestine, namely, in the two flexures of the colon, more seldom in the transverse colon.

We have now seen that, with the exception of the pains dependent on great structural changes of the gastric wall, stomach pains, and cramps come only from hindrance of the movements of the gastric contents either up or down. The important rule for the treatment of stomach and intestinal diseases to be deduced from this is that we should use opiates as seldom as possible, because morphia and opium paralyse the movements of the gastric and intestinal muscles for a long time. It is true that a subcutaneous injection of morphia acts rapidly and surely in a gastric cramp, but it only gives temporary relief, it is not curative. The pain disappears quickly, the spasm relaxes, the muscle ceases to contract, but not alone where there was spastic contraction before but also in the whole stomach. The relaxed paralysed gastric wall yields to the weight of the ingested contents and dilates, in which condition it is less able to drive out its contents than before. When the action of the opiate has ceased, the stomach resumes its work under more unfavourable conditions than when it was interrupted. For this reason we must forbid all chronic dyspeptics the use of opiates if we wish to cure them, and restrict their employment to incurable and inoperable cases, as in carcinoma. Almost all the medicaments used for gastric pain, especially cramp, have in view the facilitating of the emptying of the stomach into the intestine. And the household measures, except hot compresses to the abdomen, such as tea, black coffee, camomile, peppermint, balm, valerian teas, and the like, arouse peristalsis, open the pylorus, and favour the emptying of the gastric contents into the intestine.

To find the relation or dependence of dyspeptic conditions on other local diseases or general disturbances we should not content ourselves with simply inspecting the tongue, examining the stomach, and perhaps the other abdominal organs, but we should make a complete examination of the patient all over. The lungs especially should be thoroughly examined, since very frequently

the beginning of phthisis is concealed by gastric disturbances which spring to the fore. We should also never neglect to examine the urine at least for albumin and sugar. And sometimes the excretion of large amounts of uric acid will give points on many improper habits of diet and modes of life, or the finding of aceton or increased production of indican. The blood should also be examined, especially as to its quantity of hæmoglobin, with Fleischl's or other fit apparatus, once a week, and the patient should also be weighed. If by arranging the diet, changing the mode of life, ordering times of work and rest, resting after meals in anæmic dyspepsias, we do not increase the hæmoglobin beyond a certain limit, we must use mild preparations of iron, as ferratine or iron peptonates, in addition. A change to the mountains or seaside is often beneficial. If there be too great a loss of blood at the menstrual period, sometimes fluid extract of hydrastis canandensis in medium doses three times a day continuously, and of viburnum prunifolium twice a day, twenty to twenty-five drops, only during menstruation, prove of service.—*Boston Medical and Surgical Journal, September* 9, 1897.

43.—HÆMATEMESIS.

By Prof. Albert Robin.

[The following is from M. Robin's clinical lecture published in the *Medical Press and Circular*, October 6, 1897 :]

The clinical tableau of hæmatemesis is very variable; there are cases where the accident is followed by immediate fatal results, while there are others which pass almost unperceived, and which are easily confounded with ordinary vomiting. The amount of blood varies also considerably. Sometimes the quantity is very great, at other times almost insignificant; it may be either bright red, or more or less black, owing to decomposition by contact with the gastric juice. At times it is vomited without the slightest inconvenience, at others its expulsion is accompanied by violent pain with intestinal disturbance, with more or less putrid gastric fermentation and with general malaise. In spite of these differences in the symptoms of hæmatemesis, the fact of the presence of blood is ordinarily easily diagnosed, especially when you are present at the vomiting, for, if you are obliged to depend on the history of the accident given by the patient, confusion is frequently possible, for everyone knows that patients frequently confound hæmatemesis with hæmoptysis.

When in presence of a patient who is suspected of suffering from hæmatemesis, the first question to solve is :—Does he really

vomit blood? It is easy to understand that if the matter vomited presents the bright colour of normal blood, there cannot be any hesitation as to its nature, but if the vomiting consists of black matter, similar to coffee grounds, error is possible. First, the black matter may be due to the ingestion of certain medicines. Again, hysterical persons have more than once deceived the attendant by affirming that they have really vomited blood of a bright red colour, which they show in a vase, whereas the blood may have been from some other source. The second question to elucidate is whether the blood brought up has really come from the stomach. It will, therefore, be necessary to eliminate the ordinary causes of error: posterior epistaxis and hæmoptysis. In the former, a careful examination of the nose, mouth, and pharynx will render confusion impossible. As to hæmoptysis, as I have already said, you should never be led away by the account given by the patient; you should examine the chest (percussion and auscultation) very minutely in order not to arrive at a false diagnosis. These preliminaries gone over, we will now endeavour to make the diagnosis of hæmatemesis and to discuss its ætiology, a much more difficult matter.

The quantity of blood vomited must first of all be taken into consideration. If this quantity is very large the patient succumbs rapidly, and the diagnosis must naturally be retrospective. In these cases the hemorrhage was very likely due to rupture of an aortic aneurism or of the cæliac axis into the stomach, or perhaps the perforation of one of the larger arteries of the stomach by a large ulcer of that organ. If, though not immediately fatal, the amount of blood is nevertheless considerable, eighty times out of a hundred, a simple ulcer is the cause. This diagnosis, which should be first thought of, will be confirmed by a careful study of the other symptoms, as well as by investigating the course of the malady. However, it must be borne in mind that simple ulcer of the stomach is not the only cause of copious hemorrhages from this organ. Simple ulcer of the œsophagus, or of the duodenum, can also provoke them, but ulcer of the duodenum gives rise generally to melæna. Independently of these two ulcers, very abundant vomiting of blood can occur in a certain number of other morbid conditions. The first of these is cancer of the stomach, but hæmatemesis in any considerable quantity appears in patients suffering from cancer of the stomach only in the last stages of the malady, when the diagnosis of the malignant tumour has been already made many weeks if not months before. Consequently, error is hardly possible in these cases. Yet there exist certain forms of carcinoma rather difficult to diagnose; they are of the kind called latent, of which the first symptom is frequently considerable hæmatemesis. Trousseau, Dieulafoy, Debove, and Hanot have reported such cases.

Certain maladies of the liver, notably atrophic cirrhosis, give rise to grave hæmatemesis; but their mechanism of production is little known, and their diagnosis is usually difficult. Varicose veins of the œsophagus, which are met with especially in case of atrophic cirrhosis at the end of the disease, are also a frequent cause of hæmatemesis of a certain gravity. The same might be said of miliary aneurisms of the vessels of the mucous coat of the stomach, but these are rare, and are in reality pathological curiosities. Hemorrhage from traumatism is easy to diagnose where the cause can be traced to its origin.

The treatment of any of the causes, omitting, of course, cancer of the stomach, should be preventive before being curative. Round ulcer of the stomach should be treated almost exclusively by milk diet, which should be continued at least for six months. M. Von Leube recommends another treatment with which, however, I do not agree. He washes out the stomach to remove all the elements of fermentation which would exercise a bad influence on the ulcer, gives Vichy water to neutralise the contents of the stomach, and finally prescribes a mixture of bismuth as a regular dressing to the wound. The idea may be good, yet I insist on the necessity of giving milk, and in order to correct the hyperacidity of the stomach I prescribe the following powders, of which two may be administered daily:—Calcined magnesia, ʒss; sub-nitr. of bismuth, bicarb. of soda, aa grs. xx; powdered opium, gr. 1; lactose, gr. x. For one powder.

The symptomatic treatment of hæmatemesis is as follows:—As soon as you are called to a patient who vomits blood you must order him to bed, enjoin absolute immobility, give an hypodermic injection of ergotine over the epigastrium, and then apply ice. Internally, from one to two grains of opium should be given, and every two hours a spoonful of the following mixture:—Ergotine, ʒj; gallic acid, grs. x.; extr. of opium, grs. ii.; syrup of turpentine, ʒj; water, ʒiv.

For the syncope that may occur you should employ the usual remedies; horizontal decubitus, head low, injections of ether, flagellation, mustard leaves to the legs. Where symptoms of peritonitis set in indicating perforation of the stomach, you should use hypodermic injections of morphia. In the event of the vomiting becoming incoercible, you should order from eight to ten drops of the following preparation in a small quantity of water, to be repeated at intervals:—Picrotoxine, 1 gr.; hydroch. of morphia, gr. 1; sulphate of atropine, gr. $\frac{1}{50}$; ergotine, grs. xx.; water, ʒij.; alcohol, q. s. (to dissolve).

Besides the immediate accidents, hæmatemesis may be followed by other effects which should not be forgotten. The blood which has not been rejected may decompose and provoke putrid fermentation, especially in cases of constipation. The odour of the matters last vomited and of the breath of the

patient will warn you of this condition. In such cases purgatives are indicated in order to evacuate the intestinal tract as quickly as possible. Besides enemata of antiseptic solutions you may give a powder composed of:—Calomel, grs. ii.; jalap, grs. vi.; hydrated magnesia, grs. xx.

When the patient has got over his attack he will generally remain anæmic and debilitated. Preparations of iron become imperative, and I give the preference to the perchloride as it is hæmostatic as well as ferruginous. At the end of ten or twelve days it should be suspended, because this substance acts as an irritant to the gastric mucous membrane.

44.—PERFORATED GASTRIC ULCER.

By Walter Broadbent, M.D., M.R.C.P.

[We are only able to produce part of Dr. Broadbent's interesting paper.]

Symptoms.—Premonitory symptoms to perforation of a gastric ulcer are as a rule very scanty. In many cases even the existence of a gastric ulcer cannot be diagnosed beforehand with certainty, and in others it may be suspected, but is not thought to be serious in the absence of hæmatemesis or severe pain and vomiting. This was well brought out in Mr. Jowers's paper in the *Lancet* in 1895. In these 50 cases, taken from the records of St. Mary's Hospital and the medical journals, hæmatemesis or coffee-ground vomiting only occurred in nine, within three months of the perforation, and in four others had taken place a year or more before; in the other thirty-seven it had never occurred. Pain and vomiting after food had been present for from three weeks to three months in twenty-one cases, and pain after food without vomiting in seven more. Simple dyspepsia without definite pain or vomiting was all that had been noticed by nineteen others, while in three, no symptoms at all had pointed to the stomach before the onset of the attack of peritonitis; in these, and some of the cases with simple dyspepsia, the ulcers were of recent formation without any reactionary thickening of the edges, and it is probable that the necrosis affected all the coats of the stomach at once, so that the pain and vomiting of the less deep ulcer were absent. Immediate warnings occasionally do occur. In three of these cases the patient had an attack of intense pain in the left epigastrium, at from six hours to a day before the true onset. The pain lasted only for about half an hour, but was much more severe than that the patients had usually experienced after food, and was presumably due to a slight peritonitis round the base of the ulcer. Twice in cases of gastric ulcer supposed to be convalescent, I have seen similar acute attacks of pain, with rigidity and very marked tenderness in the left epigastric and

hypochondriac regions, which, being treated by the withholding of all food by the mouth and the administering of opium suppositories, have recovered without further untoward symptoms, and it seems probable that the bases of the ulcers became adherent to adjacent viscera.

Symptoms of perforation.—(1) The symptoms of perforation vary according to the seat of the ulcer. In a severe case the first symptom is usually a very acute pain in the left epigastric and hypochondriac region, so intense as to lead to fainting or even immediate death. In the majority of cases also there is vomiting and retching. This is followed by a state of shock, with rapid wiry pulse, low temperature, and a pale, clammy condition of the skin, which lasts for from two to six hours. Then reaction sets in and the symptoms of peritonitis supervene, the abdomen becoming rigid, motionless, and tympanitic; the liver dulness is replaced by resonance if there is much escape of gas from the stomach. The legs are sometimes drawn up, but this is not the case as frequently as in peritonitis starting in the lower part of the abdomen, and never occurs when the effusion is localised above the transverse colon. The pulse is rapid, but loses the wiry feel of the initial stage of collapse; the temperature varies between 102° and 104°. There is vomiting if food is given, the tongue becomes dry and thickly furred, and the face is anxious, pale, and thin-looking, and the eyes sunken, while the cheeks are flushed. If nothing is done, the patient lapses into a typhoid state, and death occurs in a week or less. (2) If the ulcer is close to the lesser curvature and the peritonitis is localised, there is severe pain in the epigastrium and shock at the onset, but not of so intense a character; in the majority of cases there is vomiting also. When the reaction sets in, the abdomen is motionless in respiration and becomes rigid on palpation, and may be tender all over, but the pain is greatest and the tenderness most marked in the left hypochondriac region. The legs are not drawn up. Occasionally there is pain above the left clavicle similar to the referred pain in the right shoulder in liver disease. The abdomen soon becomes somewhat distended, and tympanitic resonance may rise as high as the fifth space on the left side, and extend over the right margin of the sternum at the sixth cartilage within a few hours of the attack, liver dulness in the verticle nipple line remaining normal. Instead of getting rapidly worse, as in general peritonitis, the condition of the patient remains about the same—the pulse keeps between 110 and 120, the temperature between 102° and 103°, and the tongue remains thickly furred but does not for some days begin to turn brown. Vomiting usually ceases in two or three days. The subphrenic abscess increases in size. These cases when not operated upon may survive a fortnight or longer, dying slowly of sapræmia, or the end may be hastened by gangrene of the lung

or septic empyema. (3) If the ulcer is on the posterior surface and perforation occurs into the lesser omental cavity, the symptoms at first are similar to those just described; there is shock, with intense pain in the epigastrium, tenderness with rigidity, some distension of the abdomen, and, at first, absence of movement in respiration; but after the first day, vomiting is a marked symptom, pus and shreds of lymph being found in the vomit. Apparently the abscess by stretching the posterior wall of the stomach keeps the ulcer open, and the offensive pus, entering the stomach, causes the vomiting; whereas, in the subphrenic abscesses, in front of the stomach, the ulcer is usually found closed after the first two days, and vomiting is often absent. A tumour may be felt in the epigastric and hypochondriac regions, though in the first few days the rigidity of the abdominal walls makes its recognition very difficult. Its transverse position and the colon resonance lying below it distinguish it from a perinephric abscess. These cases may lead to subphrenic abscesses by extension upwards between the vena cava and the œsophagus, or may perforate into the colon, causing the vomiting to become fæcal, and pus to be found in the motions. (4) In the exceedingly rare cases where an ulcer near the pylorus causes a right subphrenic abscess, the first symptoms are not intense; presumably the extravasation of stomach contents is small, or general peritonitis would result.

Treatment.—There is no doubt, from a study of the reports of these cases, that the earlier an operation is undertaken the more likely is the result to be favourable, so that the surgeon depends greatly on the promptness of diagnosis of the medical man who first sees the case. I should be going beyond my province in discussing the operations, but I would suggest, if there is a subphrenic peritonitis localised by adhesions of two days' standing at least, that the best incision would be one close along the rib margin, as a vertical or oblique one would not give room enough without cutting into the adhesions below; in these cases also it seems better not to risk damaging the adhesions by a determined search for the ulcer, which is almost certainly safely closed by lymph, but to be content with cleansing the cavity, especially above the liver, and then to leave in a large drainage tube. If such a case is met with within two days of the onset, it seems to me it would be better treated by a median incision, with removal of all the lymph and sewing up of the ulcer; but the surgeon might only open the peritoneum at the top of his wound at first, and let as much as possible of the fluid and lymph be got rid of before the general peritoneal cavity is opened; and considering that in twenty-three of these fifty cases the peritonitis was localised above the colon, I think it would be advisable in all cases where the liver dulness has not disappeared, for surgeons to take this precaution of opening into

the upper part of the peritoneum only at first, so as to avoid an unnecessary spread of the effusion.—*British Medical Journal, October* 30, 1897.

45.—ON THE TREATMENT OF DILATED STOMACH.

By W. Essex Wynter, M.D., F.R.C.P.,
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The condition known as gasterectasis or dilatation of the stomach has now been known for a considerable time, and has become so widely recognised that there have come under observation a number of cases, upon which have been built up a tolerably systematic line of diagnosis and treatment. Besides those forms due to obstruction by simple or malignant growth of the pylorus, or to the traction of adhesions outside the stomach, and which have been sparingly subjected to operative interference with more or less success, there exist the larger number of cases in which the dilatation known as primary or idiopathic is dependent on simple expansion of its walls from laxity of muscular tone and the influence of overloading, accumulation or fermentative changes in its interior. Indeed the condition of atonic dyspepsia has come to be regarded as so often associated with dilatation that it becomes the duty of a practitioner in charge of such a case to look specially for its existence. Though requiring some skill on the part of the physician to elicit the evidence of dilatation, its presence is often early apparent to the patient on account of the splashing which occurs on making sudden or violent movements, as in running hurriedly up or downstairs, jumping or even making forcible excursions of the abdominal muscles or diaphragm, as in laughing or breathing hurriedly. To this may be added the sense of local discomfort and distension, the prominence of the upper part of the abdomen associated often with a falling off in bulk generally, and the occurrence of frequent liquid and gaseous eructations.

In all conditions of stomach dilatation there is a considerable diminution of hydrochloric acidity in the gastric juice and a tendency to the development of butyric and lactic acids with such microphytes as torulæ and sarcinæ. In the more severe cases a well-marked feature is the occurrence of cumulative vomiting, that is, vomiting of large quantities of dark-coloured fermented grumous and rancid material at intervals of a week or more, the ejected matters being frothy and apparently increased in bulk by standing, owing to continued fermentation. On observing the abdomen, visible peristaltic contractions are noticeable over the stomach area, and the flask-shaped outline

of the organ is often clearly apparent, though dragged down to the level of the umbilicus by its weight, leaving a depression about the ensiform cartilage. On the patient shifting his position an alteration in the distribution of dulness and resonance takes place, provided the stomach has not been recently emptied. The subjects of this complaint are commonly ill-nourished, depressed in mind, or even hypochondriacal, and liable to attacks of faintness and sweating resembling a partial condition of collapse. The detection of succussion and of the bell-sound over a dilated stomach are facilitated by the use of the stethoscope, but the most definite information of the capacity of the organ is obtained by means of the stomach-pump, and the measurement of the volume of water which can be introduced and withdrawn without forcible distension. The treatment of such cases may be divided into the removal of those causes which lead to and maintain dilatation, and the adoption of such means as we possess for promoting the contraction of the organ after dilatation has already occurred.

Among the more common causes of dilatation of the stomach may be mentioned the introduction of excessive quantities of food or drink, of which instances are afforded by vegetable feeders, and those frequent cases which arise among German students from their practice of swallowing many litres of weak beer at their "Kneipen;" the ingestion of food which by its nature or through imperfect mastication is slow of solution, this being still further delayed by feebleness of the digestive juices, by sleep, or by undue activity immediately after meals. The absence of opposing molars, hurry in taking food, and irregularity in meals, or their following too closely upon one another, are frequent sources of the accumulation of rancid and fermenting residues in the stomach, and ultimate dilatation. The naturally suggested remedy consists in correcting these defects, and in supplying the patient with moderate quantities of easily digested food at proper intervals. In slight cases and those of short standing these measures may be sufficient, but in more severe ones, and especially such as are of long duration, it is necessary in addition, to wash out the stomach thoroughly before meals for a day or two, and then before bedtime two or three times a week, so as to get rid of fermenting residues and accumulation of partly digested food. The pylorus forms a very effective barrier to solid masses, and tough bodies like thick grape skins and the pulp of an orange, have been known to remain for as long as three or even six months in the stomach; the cause of continuous irritation and fermentation. There is no doubt that emetics would be very effectual in many instances, but complete emptying of the stomach by such a process is neither comfortable nor easy to achieve, especially as these patients are rarely young, and the stomach is often sluggish as regards muscular contraction.

Provision having been made for emptying and cleansing the stomach from time to time, its contraction may be promoted by the administration of a præprandial pill consisting of strychnine gr. $\frac{1}{25}$, liq. arsenicalis ♏iv., creosote ♏i., and ext. gentian gr. ii., twice a day. In extreme cases it is useful to apply the constant current either through the middle of the back or internally by means of a wire protected in a vulcanite tube except for an aperture at the extremity, the second electrode being placed in either case over the epigastrium. A strong current can be borne without inconvenience if gradually increased and diminished, and can be relied upon to allay the pain and vomiting, and to produce contraction of the organ. Another useful measure is massage, really deep and careful pomelling of the epigastric and umbilical regions. This affords a safe and convenient method of rousing contraction and emptying the stomach, regard being had to the position it occupies, and the fact that it is commonly dragged down by the weight of its contents, the pylorus remaining looped up and somewhat kinked by the gastrohepatic omentum.—*Treatment, June* 24, 1897.

46.—APPENDICITIS.

[The following is taken from Dr. Rolleston's summary in the *Practitioner*, August, 1897:]

Appendicitis is much to the front from the point of view of treatment. The burning question of surgical interference still attracts a good deal of discussion; while from the medical point of view the question of its causation, and whether it is a late result of intestinal catarrh, and so can be prevented by appropriate treatment directed to the intestine, has been brought forward. Prevention is undoubtedly better than cure, and there is a growing feeling that the claims of a radical cure by excision of the offending organ have been hushed in some quarters to their full extent, if not beyond. Thus it is estimated that 50 per cent. of the cases diagnosed as appendicitis recover without any operation. Talamon, who was an early sponsor of operating on the appendix, has recently sounded a note of warning against useless and too hasty surgical interference. In an analysis of eighty cases of appendicitis (*La Méd. Mod.*, April 10, 1897) he advises operation under two conditions: in chronic relapsing appendicitis and when there is definite evidence of an abscess in the right iliac fossa; but he considers that when there is acute appendicitis with generalised peritonitis, operative interference is useless. This advice may be true as far as statistics go, but it is not likely to be accepted and acted upon in practice, partly because it takes away the last chance of saving

the patient's life, and partly because it must be admitted there is some uncertainty as to when generalised peritonitis, as distinguished from rather extensive localised peritoneal inflammation, is present in any given case. Thus in MacBurney's twenty-four cases of diffuse septic peritonitis, in which fourteen recovered after operation and washing out, Talamon considers that there was no evidence that in the successful cases this grave condition was present. The question of doubt, and the one which is now so freely discussed, is that of the treatment of acute cases. As to the advisability of operating in the cold on cases of relapsing appendicitis there is little if any discussion. The answer to the burning question appears to depend somewhat on whether the debater is surgically or medically minded. Dieulafoy (*Académie de Méd.*, May 11, 1897) goes so far as to say that medical treatment is of value only in "pseudo-appendicitis"—that is, in typhlitis, coli-typhlitis, &c.—and that, since it is impossible to foresee the course of appendicitis, whether favourable or otherwise, the only treatment is early operative interference. Gay (*Boston Med. and Surg. Journ.*, xxxvi., No. 13) urges somewhat the same view, but less forcibly. Fulminating cases cannot be operated on too early; and in acute cases, if the symptoms return, after being relieved by morphia, with violence in twenty-four hours' time, operative measures should be adopted, without waiting for the formation of pus. Mr. Morison (*Edinburgh Med. Journ.*, March, April, May, 1897), in a critical essay on appendicitis, gives a clinical classification:—(1) Appendicitis with a localised and dry form of peritonitis, which may be simple, recurring, or relapsing. The question of an operation during an attack is not likely to arise, but after two attacks the organ should be removed. Recurring attacks are probably the cause of cystic dilatation of the appendix. (2) Appendicitis with a localised collection of pus or of inflammatory products. Here the risk from the expectant treatment is at least eight times greater than that incurred by a suitable operation. In the majority of these cases the appendix should be removed at the same time that the abscess is opened, but this ideal method of treatment is not justified in a minority. Cases where an abscess has burst into the peritoneal cavity are perhaps the most hopeless of any. (3) Appendicitis with perforation into the general peritoneal cavity. This condition is to be suspected when agonising pain comes on abruptly after a few days of abdominal uneasiness, and operative measures should be adopted at once. The normal position of the appendix, pointing upwards towards the spleen, is one which would favour diffuse peritonitis if perforation took place; and Mr. Morison considers that the appendix is more often attacked when it is out of its normal position, though he does not believe that torsion plays any part in leading to sloughing of the appendix. Strain

seems to give rise to appendicitis in a certain number of cases, and this is probably due to the fæcal contents of the cæcum being forcibly driven into the appendix. The onset of the disease often occurs in sleep, when, from venosity of the blood, the peristaltic contractions of the intestine are more vigorous. Doyen (*La Méd. Mod.*, May 26) protests against the term "perityphlitis" being dropped, believing that many cases now regarded as appendicitis are in reality due to lymphangitis around the cæcum, which may go on to the production of small abscesses, but are extra-appendicular. Lymphangitis of the appendix or in the tissues around the cæcum tends to disappear, like lymphangitis elsewhere. Recurring attacks of inflammation, however, are a certain sign either of inflammation of the inside of the appendix or of the existence of small abscesses around the appendix or cæcum. Dr. D. P. Allen (Congress of American Physicians and Surgeons, May 6, 1897) supports the view against which Morison has revolted, that appendicitis is the result of torsion of the appendix. This bend is the result of variations in the descent of the cæcum during fœtal life into the right iliac fossa. The twisting obstructs the outflow of the contents of the appendix, and leads to distension and muscular hypertrophy. As the result of pressure, the mucosa at the bend becomes ulcerated and the stricture becomes organic. The contractions of the appendix give rise to colic, which ceases if the contents are got rid of; but after a time this becomes impossible, and therefore the distension increases to the point of perforation, and peritonitis results.

47.—THE INFLAMMATIONS OF THE COLON AND THEIR TREATMENT.

By Francis Delafield, M.D., of New York.

[The following is taken from the end of Dr. Delafield's paper. The description of productive and necrotic colitis is included, as it is said to be one of the most common forms of the disease in New York.]

There are five forms of colitis which come under observation in New York.

(1) *Acute catarrhal colitis.*—An inflammation attended with the production of increased quantities of mucus and serum, but without structural changes. Its natural disposition is to run a short course and terminate in recovery, and it is, therefore, treated successfully in a variety of ways. In children, however, the disease may be fatal, and in adults it may be followed by chronic colitis.

(2) *Acute purulent colitis.*—This is not a severe catarrhal inflammation, but is a purulent inflammation of the connective-tissue coat. This coat is thickly infiltrated with pus, while the changes in the glandular coat are secondary. The symptoms are largely those of septic poisoning, and the disease is regularly fatal.

(3) *Acute productive and necrotic colitis.*—An inflammation which involves principally the glandular coat. The main features are the necrosis and the growth of new tissue. To these correspond the septic symptoms and the disposition of the disease to continue. The symptoms may resemble those of catarrhal or of amœbic colitis. The favourable cases last as long as three or four weeks, the unfavourable cases last for months. A moderate number of the cases are fatal. The invasion of the disease is sudden or gradual. If it is sudden, the patients are attacked with vomiting, frequent passages, abdominal pain, prostration, and a rise of temperature. The first passages are diarrhœal—large or small—and composed of fæcal matter, serum, and mucus; or dysenteric—small, painful, and composed of mucus and blood. The dysenteric passages do not continue; they belong to the first days of the disease. The prostration is considerable; the patients look sicker than they do with an ordinary catarrhal colitis. Sometimes there is even a sort of shock given by the invasion of the disease; the patients may have attacks of syncope. If the invasion is gradual, the patients begin with what seems to be an ordinary diarrhœa—three to five loose fæcal movements a day, with more or less colicky pain or constant abdominal pain. There is at first no rise of temperature. The patients gradually lose flesh and strength, but it may be several weeks before they go to bed. And yet it is a matter of much importance that the character of the colitis should be recognised, and the patients put to bed during this early stage of the disease.

As the disease goes on, the passages continue to be frequent and of considerable size. They are composed of fluid fæces, serum, mucus, and often blood. The mucus is present in considerable quantities; it is diffuse or in the form of nodules. If the patients improve, the fæcal matter increases in quantity and becomes more consistent, while the quantity of serum, mucus, and blood diminishes. The abdominal pain, whether colicky or constant, continues. There is no appetite. In some cases nausea and vomiting are very troublesome symptoms. There is usually a rise of temperature in the afternoon, even in the chronic cases. The patients steadily lose flesh and strength. Of the cases which recover, some run their course within four weeks and recover entirely, and yet while the disease is going on the patients are sick enough to cause much anxiety. But there is a considerable proportion of cases in which the disease

continues for months before the patients get entirely well. And, finally, there are patients who are under observation for years who often seem almost well, but yet always relapse. In the fatal cases, I have seen the disease proved fatal in seven days, but that was in a person already exhausted by privation and exposure. The rule is that the disease continues for a number of months before the patients die. Occasionally we see such a colitis in its early stages in persons who die from pneumonia. The prognosis is serious. A moderate number die from the disease, and in a very considerable number the disease is protracted for months.

The most important time for the treatment of this form of colitis is during the early stages of the disease. It is in the patients who are neglected at first that we see the protracted forms of the disease. No matter how mild the invasion of the disease is, the patients should at once be put to bed, and on a diet composed principally of milk, and this management must be kept up until all evidences of acute inflammation have disappeared. In chronic cases, on the other hand, it is important that the patients should get out of doors and eat a sufficient quantity and variety of food. As a rule, these patients do best in a dry, elevated, inland climate. During the earlier stages of the disease irrigations of the rectum are of service, and even in the chronic cases such irrigations may be used with advantage from time to time. As regards medication, it has seemed to me that I have obtained the best results, both in the acute and chronic cases, by the use of combinations of opium, salol, and castor oil; but I must admit that these remedies sometimes fail, and that I see patients recover under other plans of treatment. In the chronic cases the patients are apt to take in the course of the disease a considerable number of drugs.

(4) *Croupous or diphtheritic colitis.*—An inflammation of distinctly infectious character, and one which is often fatal. It is an old and well-recognised form of colitis.

(5) *Amœbic colitis.*—The inflammation is caused by the infection of the connective-tissue coat of the colon with the amœba coli. The presence of this organism causes a variety of necrotic and inflammatory changes. It is this form of colitis which is so often associated with abscess of the liver.

As regards the treatment of these different forms of colitis, it seems to me that the first thing to determine is whether the inflammation is confined to the lower end of the colon or extends higher up; the second thing to determine is whether the inflammation is or is not accompanied by necrosis of portions of the wall of the colon. If the inflammation is confined to the lower end of the colon, it can be treated by irrigation alone; if it is confined to the upper two-thirds of the

colon, it can be treated by drugs alone; if it involves the whole length of the colon, both drugs and irrigations are necessary. An irrigation for an adult should consist of as much as two quarts of fluid, and the fluid must run in and out freely. If the colitis is acute and without necrosis, the best fluid is an infusion of flaxseed; if it is a colitis with necrosis, solutions of corrosive sublimate, chloride of zinc, and formalin have given me the best results. If the inflammation involves the upper part of the colon and is without necrosis, the preparations of opium and of bismuth are usually all that are necessary; but if it is a colitis with necrosis, ipecac in large doses, castor oil in small doses, nitrate of silver, salol, and naphthalin are the most useful drugs.—*American Journal of the Medical Sciences, October*, 1897.

48.—TYMPANITES.

By Miles F. Porter, M.D., of Fort Wayne, Ind.,

Professor of Surgery and Clinical Surgery and of Clinical Gynecology in the Fort Wayne College of Medicine.

[The following is taken from Prof. Porter's paper. No doubt the treatment by incision of the gut and by puncture could only be recommended if the tympanites itself threatened life.]

There are two causative elements present in most, if not all, cases of severe tympany, viz., obstruction to the passage of the gas, and undue formation of gas. The obstruction may be negative or positive, *i.e.*, due respectively to paresis, or to one of the many well-known physical causes of obstruction. In many cases a combination of causes exists. Paresis of the bowel may either be a cause or an effect of tympany, in the latter case being due to distension. It follows, then, that we have the element of paresis to reckon with in many, if not all, cases of severe tympany that have existed for many hours. The effect of atropine upon the muscular structure of the bowel should be borne in mind when using this drug, particularly in abdominal cases. In many cases of tympany the distension is practically confined to the large intestine, and, as Sweetnam has pointed out, this is particularly true of tympany coming on after celiotomy, and is due to the "downward pressure of the descending colon and sigmoid flexure upon the upper portion of the rectum, forcing the folds of Houston one upon the other, and bringing about, in this way, what is for the time in effect an impermeable stricture."

The prophylactic treatment of tympany should never be neglected in cases in which it is apt to occur. Thorough evacuation of the bowels by salines, the internal administration

of antiseptics such as salol and salicylic acid, a diet of food not prone to fermentation, combined with the judicious administration of strychnine and the use of the abdominal bandage, has in a large degree robbed tympany of its terrors for the abdominal operator. The same means will accomplish the same ends in cases other than those requiring abdominal surgery. The measure of success which shall attend our efforts in the treatment of tympanites will depend very largely upon the time the treatment is commenced. This should be instituted when the condition first manifests itself, for delay is dangerous. The giving of cathartics is worse than useless in the presence of pronounced paresis, and under the same circumstances the rectal tube and enemata will be of little avail. The utility of the latter in some forms of bowel obstruction, together with its inutility and actual harmfulness in some kinds of obstruction, are well known, and need not occupy our time here.

To Sweetnam belongs the credit of priority in recommending the postural treatment of tympany. He had observed that relief could often be secured by elevation of the hips, and was in the habit of employing position in the treatment of this condition, but he says that he did not fully appreciate "the amount of alteration which takes place in the rectal folds when one is placed in the knee-chest position" until, while watching Howard Kelly making a rectal examination, he was able to see the folds of Houston disappear into the rectal wall, and the gut straighten out. The treatment is harmless in all cases, but useless in Sweetnam's experience, in cases of general peritonitis. I am not surprised that he should obtain no results from this method in general peritonitis, for here the distension is in the small bowel, and it is only in distension of the colon that it could be effective. The knee-chest position is considered best, but the elevation of the foot of the bed, with the patient on the side, will usually be effective in cases of moderate distension. Personally, I have had no experience with this method, but shall certainly try it when the opportunity offers.

Notwithstanding that the statistics collected by Ogle seem to show that puncture of the intestine, multiple if necessary, is fraught with little danger, and is usually successful in relieving the distension, it certainly seems unsurgical, to say the least, and should be resorted to only in cases in which opening the abdomen is entirely out of the question. This measure should be employed, however, in my opinion, when death is threatened by tympany, in cases which have resisted milder means, and in which celiotomy could not be borne. I believe that in all cases, whether abdominal or not, in which tympany threatens life, and persists in spite of the usual methods to combat it, the abdomen should be opened and the gut incised and emptied.

Exceptions should be made in favour of puncture in cases in which celiotomy would prove fatal. If the patient's condition permits, the incision into the bowel should be closed after the gut is emptied, and the abdominal wound closed. As a rule, of course, one should seek to relieve the cause of the tympany at the same time that the tympany itself is removed, but, as indicated above, this is not always advisable. It will often be found better to leave bowel obstructions, pelvic abscesses, &c., for a future operation, when the patient will be better able to stand the shock. Under such circumstances, the cause of the detention remaining, it will usually be necessary to make an artificial anus instead of closing the bowel and returning it to the abdomen. I wish to say, and I speak from experience, that the operation here advised can be successfully performed in the case of patients who seem almost at death's door.

I think I am warranted in concluding as follows:—(1) That intra-intestinal tympany in and of itself often kills patients suffering from abdominal and pelvic disease, and that it may do so in cases which are neither pelvic nor abdominal. (2) That tympany occurring in the course of any serious illness should be considered a symptom of ill omen, and that measures for its relief should promptly be instituted. (3) Failing to obtain relief by cathartics, posture, enemata, and the use of the rectal tube, celiotomy and incision of the gut should be promptly done. (4) In cases of general peritonitis and bowel obstruction, no trial should be made of other methods, but celiotomy and incision of the gut should be performed as soon as the diagnosis is made. (5) Puncture of the bowel should be carried out only in cases in which the patient is *in extremis*, and then only in cases such as typhoid fever without perforation, pneumonia, &c., which present no other cause for celiotomy than the tympany itself.—*Medical News, July* 31, 1897.

49.—THE SYMPTOMS AND DIAGNOSIS OF CHOLELITHIASIS.

By Dr. J. E. Graham, of Toronto.

For the success of surgical interference in gall-stone disease it is incumbent upon the physician to make an early diagnosis, so that calculi may be removed before a serious damage is done by their presence either in the gall-bladder or in the large bile ducts, and before the system is irreparably injured by obstructive jaundice. Cases of gall-stone disease are often divided into two classes: those without, and those with jaundice. This is at best an artificial classification, since bile pigment may be found

in the urine when calculi are situated in any part of the gall-bladder or bile ducts, although its presence is much more marked when they are arrested in the hepatic or common bile duct. The symptoms are influenced very much by the length of time required for the formation of the calculi. It is generally thought that they grow very slowly, but Naunyn is of the opinion that ordinary gall-stones of the soft variety may form in a few days, even in a few hours. Biliary concretions may exist in the gall-bladder a number of years without producing any symptoms, at least any sufficient to lead the patient to consult a physician. They have been found in one-tenth of all post-mortem examinations and in one-fourth of all in which the subjects were elderly women. Frequently indefinite symptoms have been noticed, such as bilious headache, bilious attacks without headache, and a feeling of pressure over the stomach after certain articles of food. If a frequent and careful examination of the urine were made, bile would be found in many of these cases, especially when cholecystitis exists. This latter condition in the chronic form may end in contraction and atrophy of the gall-bladder. Courvoisier has collected sixty-three such cases, in seven of which the biliary passages were not obstructed. The speaker had for a number of years a patient under observation who had xanthomata of the eyelids and who suffered from frequent attacks of biliousness but with no local sign. She died of intestinal hemorrhage, and the gall-bladder was found filled with calculi. Fremitus has been noticed, and stones have been detected by sounding. This is not a safe procedure if cholecystitis be present. When in addition to calculi there is an invasion of pyogenic organisms, very grave symptoms rapidly supervene. Pain and tenderness over the region of the gall-bladder often set in suddenly. The pain is not of the nature of colic, unless the cystic duct has been entered. Symptoms of localised peritonitis and irregular high temperature, anorexia, nausea, and vomiting come on.

Dr. Graham saw a very interesting case of this kind. The patient, a man of full habit, was in ordinary health, when, while walking, he felt a pain in the right hypochondrium, accompanied by much tenderness in the hepatic region and tension of the right rectus. Irregular fever followed, with occasional rigor, and death took place in about six weeks. The autopsy showed the gall-bladder filled with calculi, the mucous surface separated by ulceration, and pyæmic abscesses in the liver and kidneys.

Eberth's bacillus is the infective agent in some cases of cholecystitis. The amount of ectasis of gall-bladder varies in different cases, and when occlusion of the cystic duct exists the distension may be very great. Biliary calculi sometimes escape into the peritoneal cavity, connective tissue, or liver; such escape into the back peritoneal cavity may occur during a

paroxysm. In one case the bile flowed into the peritoneal cavity, was removed by successive tappings, and the patient recovered. In the great majority of cases of rupture, previous ulceration of the bladder-wall has existed, and the calculi enter the surrounding connective tissue. When calculi pass into the cystic duct the well-known symptoms of colic supervene. This colic occurs in less than one-half of all gall-stone cases. An attack may be brought on by error in diet, emotional disturbances, active movements of the body, menstruation, confinement, or after removal of abdominal tumours, &c. Hagen has collected eighteen cases occurring during the course of typhoid fever. The seat of pain is usually in the gall-bladder region, but also in the epigastrium, left hypochondrium, right shoulder, and right inguinal—simulating appendicitis. The severity of pain depends more on the shape than on the size of the stone. Death has occurred during an attack. Potain believes acute dilatation of the right ventricle may take place, as evidenced by *bruit de galop* or pulsation in the epigastrium. This, he thinks, is due to a spasmodic contraction of the pulmonary capillaries and consequent obstruction of the circulation.

The diagnosis of biliary colic without jaundice is often not easily made; especially is it difficult to separate from spasmodic closure of the pylorus with painful distension of the stomach. If seen during an attack the gastric distension may be evident. Excess of free hydrochloric acid in the gastric juice points to the stomach as the seat. Rigors with fever and perspirations, especially referred to by Osler, have occasionally been observed. This condition resembles urethral fever, and probably results from toxin poisoning and does not necessarily indicate suppuration. Jaundice occurs in one-half of the cases of calculi, but the presence of bile in the urine is a valuable sign. The breaking down of calculi does not often occur. When a stone is arrested in the cystic duct the completeness of obstruction may depend on the axis of the stone, and a change of its direction may materially change the symptoms. There is no proof that calculi have origin in the cystic duct. When the calculus becomes lodged in the cystic duct the gall-bladder becomes distended. If obstruction is complete the viscus becomes distended with mucus. In some cases the calculi form a ball valve, allowing the entrance but not the exit of bile. As much as ten pints of fluid has been removed from the gall-bladder.

The diagnosis between a distended gall-bladder and a displaced right kidney is often a matter of difficulty. The differential points are:—(1) History of biliary colic. (2) Movement of tumour with respiration. (3) The lower extremity is movable, whereas the upper is fixed. (4) The kidney may be felt behind the tumour. (5) The colon lies in front of the kidney and behind the gall-bladder. (6) In pyonephrosis the urine may contain

pus, and in distended gall-bladder bile pigments may be present.

When the calculus has passed through the cystic duct, it usually finds its way without difficulty until obstructed by the narrow duodenal outlet. In many cases, however, it is found in different parts of the canal, but near the outlet in 35 per cent. of cases. The symptoms of passage of calculi through the common bile duct are similar to those already described in connection with the cystic duct. Obstructive jaundice is the marked differential sign between the two conditions. Many calculi pass through the natural channels without producing any symptoms. When there is complete obstruction the bile finds its way into the blood-vessels through the lymphatics. Cholelithiasis is now given as one of the causes of cirrhosis. The pressure of bile in the distended ducts, as well as irritation due to calculi in the extrahepatic and intrahepatic ducts, together with microbes and their products, are probably the principal agents. In all cases of biliary obstruction from calculi there is a danger of the introduction and growth of bacteria, leading to suppurative cholangitis and cholecystitis. The pain in this condition is usually not severe, and although an abscess may form, it is not large and may contain hepatic calculi. The abscesses vary in size and number. The bacteria usually found are bacillus coli communis, streptococcus, staphylococcus aureus, and the diplococcus pneumoniæ.

The diagnosis of calculous abscesses of the liver is always difficult. Naunyn gives the following points in distinguishing the jaundice of chronic lithiasis from that due to other forms of obstruction:—(1) The continuous or occasional presence of bile in the fæces; (2) distinct remissions in the intensity of the jaundice; (3) normal size or only slight enlargement of the liver; (4) absence of distension of the gall-bladder; (5) presence of febrile disturbances; (6) duration of jaundice for more than a year.

In acute yellow atrophy there is a decreased area of hepatic dulness. Fever is sometimes present in carcinoma of the liver. Calculi in the gall-bladder and biliary canals are often the cause of carcinoma. Pernicious anæmia has followed biliary obstruction. Calculi sometimes pass through the ducts into the intestines, and there increase in size and produce acute obstruction, which usually occurs at the ileo-cæcal valve. A calculus may ulcerate through the gall-bladder from a fistula, which may extend upward through the diaphragm into the pleural cavity or lung, forming a broncho-biliary fistula. A case has been recorded of perforation into the left pleura, into the mediastinum, and then into the pericardium. Perforation may also take place into the stomach, pelvis of kidney, or portal vein. When the perforation is into the abdominal wall the fistula is

usually tortuous.—(From abstract of Dr. Graham's paper, read in the Medical Section of the British Medical Association Meeting).—*Medical Record, September* 11, 1897.

50.—TWO CASES OF SYPHILITIC DISEASE OF THE LIVER.

By George L. Cole, M.D., of Los Angeles, Cal.

I believe that some cases of syphilitic disease of the liver are mistaken for ordinary cirrhosis or for certain other obscure diseases of this organ, and that some lives might be saved by appropriate treatment, which otherwise would succumb to the disease. My conclusion in this respect is based upon one or possibly two cases treated for cirrhosis of the liver (or for Bright's disease) by several competent practitioners, the patients having fallen into my hands when death seemed inevitable, and having been rescued by large doses of potassium iodide, and by mercurial injections and inunctions continued over a long period of time. In the case of one of these patients I accidentally discovered a syphilitic history which had been withheld from the former physicians in attendance, and this fact, together with the true picture of cirrhosis which the case presented, rendered completely pardonable the mistaken diagnosis which had been made. The majority of text-books on practice either omit this subject entirely, or dismiss it so briefly, that our attention is not sufficiently drawn to it. Loomis, in his "Practical Medicine," devotes two pages to the subject, but under the head of "Gummy tumour of the liver," Osler devotes a page and a half to it, and among other things says that "the patient is anæmic and passes large quantities of pale urine containing albumen and tube casts." Flint gives the subject a portion of one page, in which he says "it is usually accompanied by some or all of the ordinary symptoms of cirrhosis, and while not common it is one of the most frequent forms of visceral syphilis." Wood dismisses it with one short paragraph, while Strumpell devotes a page and a half to it, and begins his paragraph on treatment with this clause:—"Whether we feel certain of syphilitic hepatitis, or merely suspect it, specific treatment should be tried." The cases which I wish to report are the following:—

Case 1.—Male, aged 45, single; good family history. During the past ten years has been a heavy drinker, taking whisky straight and regularly rather than periodically. He denies all history of venereal trouble other than gonorrhea, but has led a dissipated sexual life for many years. On September 6, 1893, I found him confined to bed. There was considerable œdema of the lower extremities, and the abdomen was distended by fluid. The heart was normal, and analysis of the urine showed neither albumen

nor casts. Paracentesis abdominalis had been performed three times previous to this date. On September 17, I drew off the fluid from the abdomen, when a careful examination showed the presence of a slightly enlarged liver, but further than this I was not able to determine anything characteristic of cirrhosis. Thinking I had a typical case of hepatic cirrhosis to deal with, I treated him in accordance with this theory and interdicted the use of alcohol. Finding that he could tolerate large quantities of potassium iodide I prescribed it in dram doses three times daily with small doses of mercurials. During the three months following my first visit I drew off the abdominal fluid six times, removing two gallons each time. During the latter part of this period he wore an elastic abdominal supporter and the fluid accumulated more slowly. He began to gain strength and flesh and to resume his usual avocation, not forgetting in spite of my protests to return to his old convivial habits. He continued to take the iodide regularly and did well, although drinking heavily. The fluid formation ceased entirely and he went on to perfect health for many months. On November 1, 1894, I was summoned at midnight, not having seen him professionally for nearly a year, and found him suffering from a very severe gastric hemorrhage. He was prostrated several days from this, but in ten days was up again, drinking as before. He has gone on to the present time without any further trouble. The fact of his speedy and complete relief, with no tendency toward a return of his former condition, notwithstanding the continued use of alcohol, and the want of evidence to show an established collateral circulation, has led me to believe this a case of specific disease of the liver. Other than the course of the disease, together with a tolerance of large doses of the iodides and of mercury, there is no positive evidence of syphilis.

Case 2.—Male, aged 44, father of two healthy children, aged 4 and 7 years. When I first saw him, April 7, 1891, he had been confined to his room for three months, most of this time being unable to leave his bed. His sickness, however, had extended over a period of two years, and was ushered in by colicky pains in the hepatic region and gradual loss of flesh. I found him greatly emaciated, the feet and whole lower extremities œdematous, and the abdomen distended by fluid. There was considerable dyspnœa from fluid in the pleural cavities. Examination of the heart and lungs did not reveal anything abnormal. I could not procure urine for examination, but elicited the fact that some weeks previously he had been catheterised several times without result, and later on had passed large quantities of urine of such a character that a diagnosis of Bright's disease had been made, and treatment had been carried out in this direction for several weeks. Examination of the hepatic region was unsatisfactory on account of the ascites and hydrothorax. He denied any venereal history. He had been tapped twice within the month previous to my first visit. A specimen of urine was obtained on the following day, but on examination did not reveal the presence of albumen, sugar, or casts. On April 9, two days after first seeing him, I drew off ten quarts of ascitic fluid, when examination of the hepatic region showed what seemed to be a typical hobnailed liver, except that the surface projecting below the ribs seemed more markedly uneven than in any case I had previously seen. He had been taking a pill which he said contained mercury and this I had him continue, with the addition of potassium iodide in small and increasing doses. A few days later he informed me that about fifteen years before he had had a sore on his penis, which had healed so rapidly, without any further symptoms, that he did not suppose it could possibly be syphilis or could have any connection in any way with his present illness. Soon after I met the physician who had treated him years previously, and he informed

me that the patient had had a true chancre at that time. During the following five months the abdomen was tapped at intervals of from ten days to two weeks, and during this time mercurial inunctions and hypodermic injections of albuminate of mercury were given alternately, and the iodide was increased to about two hundred grains daily. He soon began to gain in strength and flesh, the time between tappings was increased, and an elastic abdominal supporter was applied. After the thirty-fifth tapping, which occurred on June 30, 1892, about fifteen months after the first removal of fluid from the abdomen, he gradually resumed work and is well to-day. He has continued to take the iodides intermittently, and is apparently in as good health as ever. —*Medical News, June* 26, 1897.

DISEASES OF THE URINARY ORGANS.

51.—RENAL HÆMOPHILIA.

By William J. Robinson, M.D., of New York.

Although hæmophilia was known as a distinct disease as early as the twelfth century, and in spite of the fact that during the last fifty years much has been written about it, notably by Virchow, Nasse, Legg, Grandidier, and Simon, we are still in complete darkness as to its pathology and morbid anatomy. Of the numerous theories which from time to time have been offered in explanation of its cause, the following three have met with the widest acceptance:—(1) That it is due to an abnormal fragility of the blood-vessels; (2) to an absence of one of the ferments, which effects the coagulation of the blood; (3) to deficient innervation of the capillaries, with consequent abnormal dilatation. But these theories still are mere hypotheses unsupported by facts. As Grandidier puts it, "hæmophilia is the most hereditary of all diseases," and, unfortunately, we know as little regarding its treatment as its etiology. Taking into consideration the rarity of the disease, especially of the renal variety, no apology is needed for reporting the following unique case:—

Arthur B., 4 years old, born in this country of Finnish parents, had been passing blood in his urine for about ten days. The mother had consulted her family physician, and had visited two or three dispensaries, but with no relief, the blood becoming more profuse with each urination. At one dispensary she was advised to have the boy circumcised, he having a long and tight prepuce, but this she did not consent to, thus probably saving the child from what might have proved in his case a fatal operation. When I was called in I found the boy playing on the floor with his little brother. He seemed to be completely exsanguinated; his general appearance was as if he were made out of spermaceti, the skin being smooth and glossy white. His hair, eyebrows, and eyelashes, resembled those of

an albino (his two brothers present the same appearance in every particular). His pulse was thready and 140 per minute, and his temperature was 97·9° F. The boy felt quite well and was not complaining. Only occasionally, on passing a blood-clot, he would cry out with pain. There was no history of traumatism. A thorough examination failed to reveal anything beyond a tenderness over the region of the left kidney. He passed in my presence a pint and two ounces of dark, bloody urine, and floating in it were two long, thin blood-clots. Upon standing the blood all collected at the bottom of the jar, leaving the supranatant urine quite clear. I injected a pint of hot boric-acid solution into his bladder and the liquid came away perfectly colourless. I gave strict orders not to allow the boy to move from his bed, and prescribed powders of one-tenth of a grain of opium and three grains of gallic-acid, one powder to be taken every three hours. I was positive that the hemorrhage was of renal origin, but was completely in the dark as to its cause. This uncertainty cleared away sooner than I expected. About four hours after I left him he was taken with a severe hemorrhage, and became faint. I was sent for in a hurry, and found him in collapse. I administered, hypodermically, my favourite stimulant combination—digitalis, camphor, and ether—to which he responded nicely, but my surprise was very great to find at the point of the insertion of the needle an obstinate, uncontrollable oozing of blood. Compression with the fingers for about five minutes, as well as the application of tannin, cocain, and Monsel's solution was ineffective in checking the hemorrhage. A pledget of cotton, saturated in a solution of equal parts of antipyrine and tincture of ferric chloride, secured by a tight bandage, after about forty-five minutes of effort, finally stopped it. I knew then that I had to deal with a case of hæmophilia. I began to make inquiries, and the information obtained corroborated my diagnosis. The mother presented nothing abnormal, except rather profuse menstruation, which always lasted from seven to nine days. Her father had died at the age of 35 from pulmonary hemorrhages and epistaxis—from consumption, she said, but the description pointed unmistakably to hæmophilia. Her first child was born at the end of the seventh month and died when a few days old from exhaustion, due to a severe hemorrhage from the umbilicus. The mother did not know that she belonged to a bleeder family. I instituted the following treatment:—A large ice-bag was kept continuously over the region of the left kidney, one grain of sodium sulphate was given every hour, and a dram of the following mixture every four hours: ℞ Hydrastinin hydrochlor., gr. iv; ergotole, ʒ ss; tr. opii deodor., ʒ ss; glycerine, ʒ i; aq. menth. pip., q.s. ad ʒ iii. The diet was confined to milk and vichy and soft boiled eggs. The next day the boy had another slight hemorrhage—and that was the last one. For two or three days afterward the urine was very slightly tinged with blood. After a few days had passed without a trace of blood appearing in the urine, I began to administer iron (liq. ferri mangan. pepton., a teaspoonful in milk twice daily) and tonics, and the boy made a surprisingly rapid recovery. He is now quite well and has had no recurrence (a year has elapsed since his first attack). He is still taking (interruptedly) sodium sulphate, hydrastis, and ergot, and also a preparation of iron. He now has considerable colour in his cheeks.

The only other case of renal hæmophilia which has ever come under my notice was in Professor Leyden's clinic, at the Charité, Berlin. A man was brought into the hospital in a condition of shock. After regaining consciousness, he said that he was taken with a sudden pain in the side, and on going into

a public toilet room, he passed what he thought must have been two litres of blood from the bladder. In the hospital he passed that same day about 1½ litres (three pints) of dark, bloody urine. He was 26 years old, and said that he had such attacks every two or three years. He once had pricked his ear with a needle, and it took two physicians several hours to control the bleeding. A brother of his was taken with a frightful hemorrhage from the rectum during defecation, and expired before medical aid could be summoned.—*Medical News, July* 24, 1897.

52.—ACUTE DIFFUSE NEPHRITIS.

By W. T. Councilman, M.D.,
Shaltuch Professor of Pathological Anatomy, Harvard University Medical School.

[The following abstract of Dr. Councilman's paper, by Dr. Rose Bradford, in the *Practitioner*, September, 1897, is included here on account of the confusion still existing in the classification of nephritis.]

Councilman (*American Journal of the Medical Sciences*, July, 1897) gives a very full account of the lesions present in acute diffuse nephritis, and, in addition, gives a classification of the different forms of nephritis. He is careful to point out that the use of the word "nephritis" does not necessarily imply that the renal lesion is one that is inflammatory in its origin; and, further, that whereas solid and mechanical irritants reaching the kidney are liable to cause focal lesions, the soluble toxins formed in disease and other soluble poisons must necessarily tend to produce diffuse lesions, which, however, may affect to different degrees different portions of the kidney or even the different elements forming the kidney. The classification adopted by Councilman is an anatomical one, and, as he points out, this is, in many ways, not so satisfactory as an etiological classification. At the present time, however, it is scarcely possible to formulate a satisfactory etiological classification. Councilman uses the words "diffuse nephritis" without meaning that all parts of the kidney are equally affected; but rather in the sense that the morbid processes do not single out any special renal elements to the exclusion of the others, although the intensity of the lesions in different portions of the same organ may be very different. Councilman recognises five primary varieties of nephritis:—Acute diffuse nephritis, subacute glomerular nephritis, chronic diffuse nephritis, senile nephritis, and amyloid nephritis. He divides acute diffuse nephritis into four varieties:—

(1) *Acute degenerative nephritis*—Here, as the name implies, the main changes are degenerative, affecting especially the

renal epithelium, such as cloudy swelling, and fatty and hyaline degeneration of the epithelium of the tubules; the changes in the glomeruli and interstitial tissue are also degenerative. The kidney may be slightly enlarged, and on section it is paler and more opaque than normally. This form occurs most frequently in febrile states.

(2) *Acute glomerular nephritis.*—Here there are "acute proliferation of the endothelium of the vascular tufts," degeneration of the vessel wall, &c., with or without degeneration and proliferation of the epithelium of Bowman's capsule. The glomerular lesions are accompanied by necrotic and degenerative changes in the epithelium of the tubules. The interstitial tissue shows some signs of œdema and of cellular proliferation, and there may be some hemorrhage in the renal tubules. The kidney is increased in size, the capsule is not adherent, and the surface is pinkish. The centre on section is wide, pale, and opaque, and the glomeruli are prominent and the pyramids congested. This form of renal disease is seen as a result of infectious disease, but it also arises independently.

(3) *Acute hemorrhagic nephritis.*—Hemorrhage is found chiefly in Bowman's capsule and in the tubules, but it also occurs in the interstitial tissue. The epithelium undergoes marked degenerative changes, and the interstitial tissue is apt to be œdematous and to show, in addition to the hemorrhages, some cellular infiltration. The kidney is enlarged, and both the surface and the section show numerous ecchymoses. Councilman found only three cases of this form in a series of fifty-two cases.

(4) *Acute interstitial non-suppurative nephritis.*—The name given to this form is apt to cause some confusion with that form of interstitial nephritis in which suppuration occurs, but it is quite distinct and unconnected with this, and perhaps the name originally given to it by Wagner, of lymphomatous nephritis, would obviate the possibility of any confusion. In this form of nephritis, extensive proliferation occurs in the interstitial tissue, the glomeruli are not affected, and there is more or less degeneration and necrosis of the epithelium of the renal tubules. The kidneys are large, pale, and often somewhat mottled, and the disease occurs more especially after diphtheria and scarlet fever, but also after typhoid fever. Councilman found nine such cases in his series.

Councilman recognises three varieties of chronic diffuse nephritis:—

(1) *Chronic glomerular nephritis.*—The size of the kidneys varies: they may be normal, larger, or smaller than normal, and there is a considerable increase in the connective tissue affecting almost equally all parts of the kidney. The capsule is adherent, the surface pale but not granular. The glomeruli show extensive hyaline degeneration, and there may be some

increase in connective tissue within the capsule, and also some increase in the capsular epithelium. The tubular epithelium is extensively degenerated. This kidney disease arises usually as an independent affection, but it may follow an acute or subacute affection.

(2) *Chronic arterio-sclerotic nephritis.*—Here the lesions are not so diffuse as in the preceding glomerular form. The lesions in the arteries are marked, the renal epithelium is extremely degenerated, but areas may be found showing comparatively little change and with no increase of connective tissue, but, with the exception of these areas, there is a great and widespread increase of connective tissue. The capsule may or may not be adherent, but the surface is granular and the organ is usually shrunken and red in colour.

(3) *Chronic degenerative and interstitial nephritis.*—Councilman refers to this class the cases of contracted kidney which occur without primary arterial lesions. He states that degeneration and atrophy of the epithelium are present, and that there is a general increase in the connective tissue more diffuse in its distribution than that seen in the arterio-sclerotic nephritis, and not so diffuse as that seen in chronic glomerular nephritis. The increase in the connective tissue is most marked where the epithelium is most degenerated, and Councilman takes the view that the effects are produced by a slow degeneration of the epithelium, and this is followed by an overgrowth of fibrous tissue in subacute glomerular nephritis. Here the cells and vessels of the glomerular chamber undergo extensive hyaline degeneration, and in addition there is considerable overgrowth of the connective tissue around and in the glomerulus, with proliferation and desquamation of the capsular epithelium. The tubules show degenerative and necrotic changes in the epithelium, and there is some overgrowth of connective tissue in the interstitial tissue. The kidney is enlarged, the capsule adherent, and the surface pale or mottled, and on section the centre is increased in width, pale, and opaque. There are gradual transitional forms between this form, on the one hand, and acute and chronic glomerular nephritis.

53.—ON THE TREATMENT OF CHRONIC PARENCHYMATOUS NEPHRITIS.

By W. P. Herringham, M.D., F.R.C.P.,
Assistant Physician to St. Bartholomew's Hospital.

[The following is from Dr. Herringham's paper. Some would still prefer to at least restrict nitrogenous food-stuffs, but, of course, with judgment.]

In a case of chronic parenchymatous nephritis, can one ever restore the kidney by any treatment to the normal? I have no doubt that many children who are carefully kept lose albuminuria even after it has lasted several years, and it appears that the same exceptionally occurs in adults too. It is, however, of no use to aim directly at this end, for we know nothing that will make glandular epithelium grow again; rather should we endeavour to prevent the kidney from becoming more affected by fresh inflammation, and to keep the patient in his health. For these ends drugs are as nothing compared to management. It used to be thought that for these patients a meat diet was not wholesome. The reasons given were, first, that meat diet increased the albuminuria; and second, that a fish, a farinaceous, or a milk diet was less irritating to, and put less work upon the kidneys, and produced less of the toxic products which are thought to cause uræmia. These ideas are not founded upon fact. Meat diet does not always increase albuminuria, and if it did the loss is so slight that it is quite unimportant. We do not know what toxic products cause uræmia, and therefore cannot tell what will produce them. Lastly, there is no evidence whatever that a meat diet is irritating to the kidneys. It would be strange if it were. The plain fact is that in regulating diet we should almost discard all thought of the kidneys, and consider the general health alone. The same diet will not suit all persons, but for each that should be chosen which will cause the least disturbance of the digestion and the highest state of health. In most cases these ends are best reached by a mixed diet, which should be given with regularity and with frugality. Excess, rich food, irregular meals, are all to be avoided, because they upset digestion. Where appetite is bad, a little alcohol is necessary, and for these cases dilute spirits are always more wholesome than wine; a little alcohol does no harm, but the residual substances in wine are very unreliable. Habits of life must also be regulated, and, like diet, much upon the lines of childhood, for adults differ from children chiefly in their power of resistance, and Bright's disease, by lessening this, puts them back into the infant class. Such patients cannot afford the luxury of carelessness, and must wear flannel, avoid wet and cold, keep early hours at both ends of the day, and take regular exercise. Laziness is as bad as over-exertion, for it lessens the internal processes, entirely unknown to us, which produce the interchange of nourishment and waste. It is generally united with greed, which doubles its ill effect. Mental overwork and a sedentary life are again a bad combination, for the first injures the primary and the last the secondary digestion.

To these general rules one condition forms an exception. If we are in fear that the tension in the vascular system will

produce ill effects, diet must be kept as low as is safe. To diminish vascular tension nothing equals rest in bed and fluid diet, and short of this I believe that where it can be borne a vegetarian diet will have the same effect, but I have only tested it on a few cases. Most of these patients cannot digest well enough to use it. This problem how to feed a patient who has bad digestion and high arterial tension, so that he may have enough to keep him from losing ground, and yet so little that his blood pressure will fall, is one of the most difficult in medicine. Treatment then becomes a system of ingenious catering. The best drug for this condition is iodide of potassium or sodium. The common ailments of Bright's disease are anæmia and indigestion. Patients usually take iron without difficulty, and it is the most important drug in the whole treatment of the complaint. Digestion has to be treated as if Bright's disease were not present. The symptoms which warn us of danger are anasarca and those called uræmic. In chronic parenchymatous nephritis anasarca generally coincides with scanty excretion of urine, and probably depends upon feebleness of the circulation. This itself may, of course, be due to some impurity in the blood acting upon the heart, or the nervous mechanism that controls it. One would expect that cardiac tonics would be the best treatment, but I must confess that I have not, as a rule, found them answer. Once or twice striking results have followed the use of digitalis, of diuretin, or of broom tea, but I have seen similar improvement without any drug, and certainly in the majority of cases these drugs have not succeeded. Iodide of potassium in rather large doses, cantharides, and belladonna have been recommended by different physicians. Purging and sweating are said by some to be of more value. For the first the acid tartrate of potash and jalap, or some other resin, is a standard prescription, and Roberts uses it in a large dose every second or third morning in preference to smaller doses more often repeated, because the nausea and unpleasantness has thus to be less often undergone. To increase sweating, hot baths, vapour baths, and pilocarpine can all be used. When patients are very dropsical they cannot be put in a bath, but regular baths are a very good means of prevention. If needs must the pressure on the skin may be relieved by inserting Southey's tubes, or by acupuncture. The first is the best, because the fluid then runs away and does not irritate the skin. Antiseptic solutions ought to be applied to the skin before the tubes are inserted and after they are withdrawn, and the tubes themselves should be boiled before they are used. When dropsy comes on without signs of fresh inflammation of the kidney it is of bad augury.

Uræmic symptoms are repeated vomiting, paroxysms of dyspnœa, persistent headache, drowsiness, coma, and convulsions.

We suppose them due to a poisoning of the nervous centres by some impurity in the blood, but we do not know what it is. Vomiting I have seen relieved by hydrocyanic acid. When it is not severe, gentian and bicarbonate of sodium suffice. The headache is sometimes cured by cannabis indica, sometimes by phenacetin. One ought also to increase the secretion of urine, if that be possible, by some of the drugs mentioned above. I do not know any drug that will prevent the curious asthmatic attacks that sometimes occur. When they come on an injection of ether is the best treatment. Coma and convulsions are not necessarily fatal, but they are very grave. Purging and sweating are the two main lines of treatment, and chloroform can be given in the convulsions. Much controversy has raged round bleeding in these states. It seems allowed on all sides that it is of no use for coma. I have never used it for convulsions, but it used to be much recommended, and speaking *à priori* it seems reasonable. The fact, however, remains that it has gone out of fashion, and perhaps that is better evidence than any written opinion.—*Treatment, June* 24, 1897, p. 169.

54.—CHYLURIA.

By Byrom Bramwell, M.D., F.R.C.P. Edin., F.R.S. Edin., Physician to the Royal Infirmary, Edinburgh, &c.

[The following is abstracted from Dr. Bramwell's paper:]

Cases of chyluria are extremely rare in this country. In the great majority of typical cases of chyluria, the condition is due to the obstruction of the lymphatic channels by the filaria sanguinis hominis. Hence it is that chyluria is rarely met with in this country, and very rarely indeed even then except in persons who have lived in tropical and subtropical countries in which the filaria sanguinis hominis abounds. You remember that the disease elephantiasis Arabum has the same distribution and is due to the same cause. The embryo of the filaria, or masses of these little organisms, obstruct the lymphatic channels and produce elephantiasis Arabum, lymph scrotum, and chyluria. In cases of chyluria the dilated lymphatics and lacteals must obviously communicate with some part of the genito-urinary tract.

Mosquitos seem to be the active agents by which the disease is propagated. The mosquito bites a man or an animal affected with the filarial disease. The filaria curls itself round the proboscis of the mosquito, is sucked into the stomach of the mosquito, passes into the tissues of the mosquito, grows and develops there. When the mosquito dies the worm is set free, and, getting into drinking water, is again introduced into

the human subject through the stomach and alimentary canal. It must, however, be remembered that all cases of chyluria do not appear to be due to the filaria sanguinis hominis. It seems certain that if the abdominal lymphatics are obstructed in any way, and if a communication is formed between the dilated and varicose lacteal or lymphatic channels and the urinary tract, the urine assumes the characters of chyluria. But, although this is possible, it must be admitted that the vast majority of cases of typical chyluria are due to the presence in the body of the filaria sanguinis hominis. It seems probable that in many cases of chyluria the lymphatics in the wall of the bladder, ureter, or pelvis of the kidney are dilated and in a varicose condition.

In this country the majority of cases occur in males, but this is owing to the fact that men travel much more than women, and that they contract the disease in the countries where the filaria is prevalent, and bring it home to this country. In filarious districts women are said to suffer in a somewhat larger proportion than men. Such are the general facts connected with the etiology of the condition.

Let me now briefly detail the clinical features of one particular case. They are as follows:—

The patient, a single lady aged 66, was seen with Dr. A. on November 2 She was born in the Mauritius, and lived there till she was 30 years of age. She then came to this country, and has resided here ever since. She states most emphatically that she has never had anything like chyluria before. For some years she has suffered from bronchitis, bronchitic asthma, and has not been very strong. For some years past the tongue has been large and sore, but she has never suffered from dyspepsia. Three months ago the feeling of weakness increased, and she began to lose flesh. Her friends noticed that she looked ill. It was about this time (three months ago) that the chyluria commenced; it has continued ever since. The morning urine has frequently been quite clear, but the urine passed in the afternoon and evening has always been milky. The heart was weak, but all the organs appeared to be normal; in particular, there is no evidence of disease in the abdominal cavity. The urine passed on November 2 was quite clear and pale, specific gravity 1010, neutral in reaction, and free from albumen, blood, and fat. The blood examined at 11 a.m., and also at 11 p.m., was quite normal in appearance. There were no filarial embryos. The patient was advised to continue the malto-peptin, which she had been taking for the past three days, and to which Dr. A. attributes the improved condition of the urine; to carefully regulate the diet and bowels; and a tonic containing dilute nitric acid, strychnine, and infusion of gentian was prescribed. I have had no opportunity of seeing the patient again professionally. She is now quite well. Under the treatment which was adopted the chyluria rapidly disappeared, and has never returned.

In some cases of chyluria every specimen of urine is milky; in others the chylous appearance is only seen at intervals or at some particular time of the day. In many cases the urine which is first passed in the morning is clear, and it only becomes

milky after eating and after exercise; and this seems to be so in the case which I have brought before you. In many cases of chyluria the morning urine is either quite normal or it contains some blood and gelatinous mucus. After eating it assumes the chylous appearance, particularly in the afternoon after dinner. The fact that the milkiness only appears after eating is, of course, highly suggestive of chyluria. It shows that the fatty material only gets into the urine when the lacteal and lymphatic vessels are distended during the process of digestion. In our case the morning urine gives a very definite reaction with guaiacum and ozonic ether; it evidently contains a considerable quantity of blood. The milky appearance of the urine is due to the presence of fat. In many cases the fat is in the form of an emulsion, the fat particles being so small that they cannot be recognised, even by high powers of the microscope. In other cases definite fat globules can be seen under the microscope. That seems to be the case in this particular specimen. In cases of chyluria the kidney is rarely diseased, the urine very rarely contains tube casts. This is an important point, for it tends, I think, to show that the theory which some authorities have advocated, namely, that in cases of chyluria the fat is separated from the blood by the kidney, is erroneous. If the kidney were separating fat from the blood for long periods of time—and in some cases the chylous condition of the urine persists for years—it is probable that in the course of time the kidney substance would become diseased, and if this were so the evidence of such disease would be present in a considerable proportion of cases of chyluria.

The clinical symptoms which cases of chyluria present are very various. In some cases there are no symptoms at all. Cases have been known in which the patients have passed chylous urine for years, apparently without any disturbance of the general health or any local symptoms. In most cases the patients complain of debility; in many cases the patients become emaciated, in some cases markedly so. In some cases they are anæmic. Diarrhœa is by no means uncommon. Occasionally some of the other pathological alterations which result from the presence of the filaria sanguinis hominis in the body (such as elephantiasis of the legs or scrotum) are also present.

In the tropical (filarial) common form of the disease the object of treatment is to destroy the filaria, and to remove the lymphatic obstruction. Iodide of potassium, tincture of perchloride of iron, gallic acid, and a decoction of mangrove bark are said to be the most useful remedies. My friend Professor Lawrie, of Hyderabad, claims to have cured several cases by the internal administration of thymol, 1 grain three or four times a day. Benzoic acid has also been recommended.

Boracic acid should, I think, be tried and possibly also corrosive sublimate. In the non-filarial cases, the treatment must be guided by the supposed cause in each individual case; but it is rarely possible to diagnose the exact cause of the lymphatic obstruction. And in the rare cases in which the cause can be definitely determined, the nature of the lesion (malignant disease, &c.), usually precludes successful operative interference.

55.—TREATMENT OF GOUT.

By H. C. Wood, M.D.,

Philadelphia.

[The following is taken from Dr. Wood's paper:]

When we come to treat gout, if we purge ourselves of the false idea which we think we possess, we can recognise the importance of this great principle, not to attempt to treat gout at all, but attempt to treat the individual who comes before us. Let me take simply the question of diet. You know that we inherited from Sydenham the belief that gout was made worse by red meats, and that they should not be used. I have seen gouty patients in whom a single piece of ordinary red roast beef would precipitate a furious attack. I have also seen many gouty patients who would not get well until they were put upon red meat. What is the diet for gout? There is no diet for gout. It is diet for the individual. I have seen gouty patients who, if they took starch or sugars, went right down; and I have seen gouty patients who had to take starch and sugars to be built up. Therefore the first principle in the diet of gout is to adapt it to the individual before us. You judge of the case by the effects of experiment. In a large majority of cases sugars and starches have to be cut off. In spare gouty patients starches often do good; farinaceous diet may be essential. You have to order your diet according to the individual. A milk diet is one which probably suits the large majority of patients. But that which suits the individual, the stomach, the digestion, will suit the gout or kill the gout. When we come to the treatment of gout by exercise we find the one thing which does more good than anything else in almost every case, provided we direct the right amount of exercise. If we try to put into an ounce bottle, three gallons of exercise, we crack the bottle. Massage is a form of exercise, and it may be all that your patient can endure; fifteen feet of walking may bring on weariness or it may require some Alpine height. The same story, study your case. Begin with the slightest amount of exercise, but do not let up. Be inexorable. Keep it within the point of causing exhaustion, and each

day do an ounce more if necessary. That is the whole secret of exercise in gouty patients. Begin with a small measure and gradually increase the amount, and you will find it does more good than any drug. The bicycle is the great calisthenic of the world.

With regard to drugs, there are a great many people who tell you that salicylates do no good. Men do not get good out of salicylates because they do not use them properly. I do not believe that salicylates cure gout or rheumatism, any more than that bromides cure epilepsy. They simply aid in keeping down the diathesis. If there be any cure, it is exercise. If you use your salicylates on a case properly, and get no response, you have something more than ordinary gout or rheumatism to deal with. There are certain cases which approach typical gout such as we rarely see in America, in which colchicum does good, much more good than salicylates. I have seen two cases of typical English gout corresponding to Sydenham's description, and only two. We do not have it in this country. Those cases colchicum suits better than salicylates do. Sometimes, when the case is on the border line, you will get the best results by a combination of colchicum with salicylates. If you have a strong robust man, he will stand it. Give him knock-down doses in addition to purging him, and you will bring him through. But that treatment may be worse than the disease, and has to be used with caution. In using salicylates the profession almost universally choose the worst salt they can find, and that is the sodium salicylate. It is, perhaps, not so bad as salicylic acid, but it is much more apt to turn the stomach, and is less effective and more depressing than the other salts of salicylic acid. The two salts which are truly useful are the ammonium salt and the strontium salt. The ammonium salt acts immediately and severely; the strontium salt acts slowly. If you have an acute case, use salicylate of strontium, or use the two combined. The strontium salt has this advantage, that it does not derange digestion anything like the other preparations, and many a time have I seen the best effects on the intestinal condition from the use of the strontium salt. In a large majority of cases you will find that salicylates produce depression, and perhaps a little nausea, general wretchedness, and the patient refuses them. Nine times out of ten you can overcome those effects by combining your salicylate with digitalis and strychnine in the same prescription.

As to baths, you can not cure a diathesis by baths. It can not be done. But baths are useful, hot baths, steam baths, Turkish baths. Any man who values his own life, who has had a gouty grandfather, ought to take a Turkish bath once a week. You can not wash out ancestral traces in any other way. The kidney disease and the atheroma will be far less rife if we use the hot bath more than we do. The baths eliminate, give a temporary

result, and are very useful when employed with the understanding that they do not cure the disease but relieve the symptoms.

A word about the Tallman-Sheffield apparatus or dry heat, which I have had a good deal of experience with this year. For about three months I had a large clientele using it all day long. In the first place, it is absurd to suppose that this is going to cure the gouty diathesis any more than that any other application will. In the second place it is my experience that it has very little value in the rheumatoid arthritis. In the third place, it is of very little value in chronic inflammations, even of purely gouty character, in joints. But I had my office crowded with people seeking relief, and it is empty to-day, and that is the best criterion of the result. If the results claimed for the treatment were obtainable, I could soon fill this hall with patients, for they all want relief, but every missionary I sent out converted the people to the wrong faith. On the other hand, when you have deposits in the tendons and outside the joints; when you have traumatic synovitis, whether in baseball men or other persons, the results of this apparatus seem almost marvellous. I have seen a pitcher's hand drawn up and disabled for three or four years, the condition pronounced by a distinguished physician as gout, treated by the dry heat method, and after three or four treatments the hand had become pliable and the use of it came back. So, in acute strains and tendinous inflammations, this dry heat is of great value. In subacute rheumatism it is of value through its sweating and local influence. It has to be used at high temperatures. I carried it up to 330 degrees F. You can scorch the lint wrapped around the limb without scorching the limb. It has no value at all, according to my experience, in old cases of rheumatoid arthritis, and very little use in rheumatism of the joints.—*Journal of the American Medical Association, July* 31, 1897.

56.—THE TREATMENT OF ALBUMINURIA IN DIABETES MELLITUS.

By M. Robin.

M. Robin (*Bull. Gén. de Therap.*, August 15, 1897). Albuminuria is a serious and not uncommon complication in cases of diabetes mellitus. Armanni, Strauss, Ebstein, and Ehrlich have all dealt with the condition, and have ascribed it to degenerative changes in the kidneys themselves. Robin admits that albuminuria may in some cases be due to "glycogenic infiltration" (Ehrlich), or "necrosis" (Ebstein), or "hyaline degeneration" (Armanni), of tubular epithelium; and

considers such cases difficult if not impossible to cure. For the diabetic here becomes a "Brightic." But he draws attention to other forms of albuminuria in diabetics, which are functional, and hence susceptible of treatment, and at the same time important to recognise and treat. He divides them into two classes—mild, in which the amount of albumen is small, not exceeding 0·50 gr. per litre; and severe, in which it is copious.

Treatment.—The general principles are:—(1) To diminish the quantity of nitrogenous foods. (2) To increase the proportion of green vegetables. (3) To moderate physical exercise. In mild cases of albuminuria one first pays attention to the diabetes.

M. Robin gives antipyrine with bicarbonate of soda and cinchona wine. He admits that antipyrine is irritating to the kidneys, that it should not be given for more than four consecutive days, and that the dose should not exceed 2 grammes in twenty-four hours. A moderate dose for one day is 1 gr. 50. After four days, should the glycosuria not become diminished, he treats the patient for ten or fifteen days as follows:—(1) At early breakfast a cachet of sulphate of quinine (0·50 gr.) is given. (2) Before the two principal meals in the day (lunch and dinner) he gives a cachet containing arseniate de soude 0 gr. ·02; carbonate de lithine, 0 gr. 10; codeine, 0 gr. ·02; boudre thériacale, 0 gr. 15; extrait de quinquina sec., 0 gr. 20. Eau de Vals (Saint-Jean) and cinchona wine are drunk at meals. If the sugar has abated in quantity during the four days of treatment by antipyrine, attention is turned to the albuminuria, without further treatment of the glycosuria. If the albuminuria seems to depend upon gastric disturbances, these are treated. If it depends on deficiency of salines, these are supplied in milk diet, meat bouillon, and appropriate saline remedies.

When the albuminuria is due to phosphaturia, he gives twice a day, in the early morning on an empty stomach, and a quarter of an hour before dinner, in half a cup of milk, a tablespoonful of the following solution:—Arseniate de soude, 0 gr. ·05; iodure de potassium, 5 gr.; eau destillée, 300 gr. And also at dinner and breakfast a pill containing quinine and nux vomica. After fifteen days of this treatment, arsenic is omitted, and glycero-phosphates of calcium and magnesia, of each 0 gr. 10, with nux vomica 0 gr. ·02, are given at meal times in cachets. After another period of fifteen days, hypophosphites of strychnine, quinine, magnesia, potash, calcium, soda, and iron, are given before lunch and dinner. In cases where albumen is copious, reaching from 0 gr. 50 to 3 gr. a day, one has to consider whether the condition depends on organic renal disease or is merely functional. Positive signs of renal insufficiency or cardiac affection may be absent. The amount of albumen passed

is no criterion; the presence of hyaline casts, or of any other except fatty granular casts, is of no significance. Sometimes the result of treatment is the sole proof that the albuminuria has been functional, or otherwise.

The main lines of treatment of severe albuminuria in diabetics are:—(1) To give antipyrine with caution and in doses not exceeding 0·75 gr. per diem for three days. By this time the sugar has usually decreased considerably. (2) The patient is then put upon milk diet until the sugar again becomes abundant, whilst the albumen has decreased. (3) Another course of antipyrine is then given. (4) Milk diet is again resumed, and the patient takes lactate of strontium 15 gr. in water 150 gr. in the course of the twenty-four hours. By this plan of treating alternately the diabetes and albuminuria, M. Robin claims satisfactory results in a short space of time.

When such treatment fails, and it is evident that organic renal disease is present, he puts the patient upon a rigid milk diet without any drug, unless one of the following contraindications arises:—(1) If the albumen falls to an unvarying percentage the diet must be changed. (2) If the sugar increases to a high proportion the diet must be stopped, and antipyrine cautiously given. (3) If the patient becomes pale and cachectic, vegetables, especially the green varieties, must be added to the milk diet. (4) If milk is only tolerated in insufficient quantities (less than 2 litres in twenty-four hours), it is necessary to supplement the diet. (5) If the urea decreases considerably, eggs and meat must be supplied. (6) If gastro-intestinal troubles occur (tympanites, furred tongue, diarrhœa), a return to mixed diet must be made.

In some cases drugs are useful in addition to milk diet. He speaks highly of lactate of strontium and gallic acid, which he prefers to tannin, because it is better tolerated by the stomach, and also more efficacious in its action on renal lesions. He combines it with aloes and cinchona in pills, as follows:—Acide gallique, 0 gr. 10 à 0 gr. 15; aloès socotrin pulv., 0 gr. 02 à 0 gr. ·05; poudre d'extrait de quinquina sec., 0 gr. 15. for one pill; two to four being taken in twenty-four hours. After a time the mixture containing arsenic and iodide of potassium already mentioned may be given. Tincture of cantharides—recently recommended by Lancereaux—he thinks should only be given in small doses, beginning with one drop twice in twenty-four hours, and rising by quarter drops until two or three are taken, which limit should never be exceeded.

Finally, M. Robin enlarges on the importance of recognising at once, and treating albuminuria in diabetics.—*Dr. Leonard Guthrie's abstract in Treatment, October* 26, 1897.

Surgery.

GENERAL SURGERY AND THERAPEUTICS.

57.—DEEP TISSUE TRAUMATISM FROM RONTGEN RAY EXPOSURE.

By David Walsh, M.D. Edin.,
Physician, Western Skin Hospital, London, W.

[The following, taken from Dr. Walsh's paper, obviously deserves much attention:]

It has been generally assumed that no harm has been done to the deeper structures by the passage through the body of rays from the focus tube. So far from that view representing the exact state of affairs, it seems to the present writer that the method of Röntgen ray diagnosis may exert a definite harmful action upon some of the deeper tissues of the human body. The facts that have suggested that opinion may be gathered from the following briefly noted cases:—Professor Waymouth Reid, of Dundee, experienced a severe dermatitis and loss of hair after four exposures, from twenty to forty minutes each, within a period of four days. The focus tube was placed over the front of the body, and on the evening of each exposure marked erythema of the chest and belly was noticed, as well as slight redness of the back. This interesting observation seems to point to a kind of selective action traumatism of the deeper epidermis and dermis by rays capable of passing through the substance of the body. The only recorded instance, so far as the writer knows, of apparent injury to deep structures by the Röntgen methods is one given by an American surgeon, Mr. Gilchrist. It was that of a demonstrator, aged 32 years, affected by a severe dermatitis after frequent and prolonged exposures. At the same time the bones of the hand became tender on pressure. A skiagraph showed the presence of a distinct osteoplastic periostitis, and probably an osteitis of the first and second phalanges of the index and second fingers, and also of the heads of the corresponding and metacarpal bones.

A remarkable instance of apparent injury to brain structures by the rays of the focus tube has come under the notice of the present writer. The sufferer, a man 49 years of age, had demonstrated the rays for some months, and had suffered from several slight attacks of dermatitis. At length he experienced

a severe illness after a week's prolonged demonstration, during which the tube was constantly near his head, although separated by a wooden screen. The main features of his attack were giddiness, slight headache, vomiting, diarrhœa, high temperature, and prostration. He was under the care of Dr. Murray, of Clacton-upon-Sea, who has kindly furnished the following note. When the patient came under observation his temperature was 103·5°, pupils sluggish, frequent diarrhœa and vomiting, great languor and debility. Dr. Murray regarded the attack as in some way due to Röntgen ray exposure, and compared it at the time with the symptoms of "sunstroke." The giddiness persisted for a couple of months. On the whole the facts of this illness appear to be consistent with a theory of gastric and cerebral irritation, set up by focus-tube exposure, in a subject proved to be susceptible by previous dermatitis from a similar cause.

Another case has come under the writer's notice. A practical worker, Mr. Greenhill, was carrying out a series of experiments involving exposure of the region of the stomach for a period of about two hours daily. After some weeks he complained of gastric symptoms, such as pain, tenderness on pressure, flatulency, colic, and diarrhœa. He went away into the country for a fortnight and got well. On his return he resumed his experiments, and after a fortnight experienced a similar attack. He subsequently shielded his stomach with a thin sheet of lead, and his symptoms finally disappeared. This history certainly suggests that in his case the rays of the focus tube caused a direct inflammation of the gastro-intestinal mucous membranes. Other facts pointing to deep action of the focus-tube rays are the local tremors often set up by exposure, and the apparent shrinking of the heart noticed in several instances by Dr. Bezly Thorne. Lastly, there is the action, noted by Despeigne and others, of these rays in the relief of the pain of cancer.

If, from the foregoing grounds, we may assume that focus-tube traumatism of the deeper structures of the human body occurs, then we have at once a remarkable analogy with the results of exposure to the sun. Severe resulting rashes are common to both agencies, and may follow a single exposure. Pigmentation of skin is another common effect. In the case above mentioned, Despeigne used the rays to relieve the pain of cancer; he reported that after the eightieth sitting the skin of the patient's neck became as black as that of a negro. Then in the case of Dr. Murray, we have a perfect mimicry of mild-heat apoplexy. So far as any ill-effect of the sun on gastro-intestinal mucous membranes is concerned, the writer knows of no direct evidence; on the other hand, however, obstinate constipation is the rule, together with what is usually regarded as cerebral vomiting. From the inherent conditions of the exposure, the

brunt of the sun's rays would naturally fall upon the head, and it is commonly supposed by anatomists that the thickness of the negro skull is an acquired character due to prolonged exposure to the rays of a tropical sun. We know that sunlight has a powerful influence upon the general health, and it seems quite possible that the sun may have a much greater and more direct effect upon the deeper structures of the human body than has been hitherto imagined.

Personally, the writer is inclined to think that the focus-tube traumatism may ultimately prove to be due to heat rays, in other words, to be a kind of burn. The cathode rays strike the platinum anode, or anti-cathode, and make it hot; there they are in part converted into Röntgen, or X rays. What becomes of the rest of the cathode rays is not quite known, but it is generally believed that some of them, at any rate, are converted into heat rays, by which means a tube in action becomes warm. This heatburn theory was suggested to the writer by the following cases, brought under his notice by Mr. Webster, of Blackheath, a gentleman who has had considerable experience of Röntgen ray work. In the first instance, he exposed an individual something like a score of times during a period of six months. Six weeks after the last exposure the hair fell out from one side of the head. The only differing condition of experiment, so far as could be ascertained, in the last exposure was that the cathode end of the Crookes's tube had been kept continually heated. The other case was that of Mr. Webster himself. For a year or more he had undergone constant exposure to the rays without bad results. He then injured himself with a metal developing solution, and shortly afterwards a diffuse dermatitis appeared on the back of his hand. This traumatism, again, coincided with the heating of the cathode end of the tube. Now in both the above instances, previously insusceptible persons became susceptible under altered conditions of experiment. The alteration consisted in heating the cathode end of the tube, which means, when applied to a Crookes's tube in action, an increased production of cathodal rays, which are, as already stated, in part converted into heat rays. There is, therefore, some probability that in heating the cathodal end of the tube we increase the resulting heat rays thrown off from the tube. Lastly, the cathode rays strike the platinum anode or anti-cathode and render it red-hot, and it is not unreasonable to suppose that their contact with the skin surface might also have a calorific effect. The identity, however, of the actual damaging factor to the living human tissues is still unascertained. It may possibly prove to be a non-luminous ray common to sunshine and to the rays emitted from a focus tube. In both sun and focus-tube traumatism, individual predisposition plays a vital part.—*British Medical Journal, July* 31, 1897.

58.—THE ADVANTAGES OF THE TRENDELENBURG POSTURE DURING ALL OPERATIONS INVOLVING DIRECTLY OR INDIRECTLY THE CAVITIES OF THE MOUTH, NOSE, AND THE TRACHEA.

By W. W. Keen, M.D., of Philadelphia,
Professor of the Principles of Surgery, and of Clinical Surgery, Jefferson Medical College.

[The two illustrative cases of epithelioma and sarcoma respectively of the tonsil, in which Trendelenburg's position was used, are omitted.]

I desire to call attention to the great advantages which may be secured by operating on the tonsil and on adenoid growths in the pharynx in the Trendelenburg position. But this position has had a very much wider use than merely in operations upon the tonsil. I have repeatedly used it in the removal of pharyngeal tumours, naso-pharyngeal tumours, in extirpation of the tongue, extirpation of the upper and lower jaws, all operations involving the cavity of the nose, in cleft palate, hare-lip, epithelioma, or other tumours of the lips, tumours of the roof of the mouth, &c. The patient is placed at about an angle of 35 to 45 degrees. Arrangements must be made, of course, by means of shoulder braces, to prevent his slipping off the table.

It is impossible, of course, for blood, any more than water, to run uphill, and in any of these operations mentioned, if the patient is placed in this position, the first advantage is that there is little danger of an aspiration pneumonia following the operation. The second advantage is that by this means we may generally avoid a preliminary tracheotomy. This is no slight advantage. A tracheotomy wound is always necessarily an infected wound. It adds, therefore, very greatly to the dangers of the principal wound. This of itself is of prime importance, and even if no other advantage were gained, would justify the procedure. Thirdly, there is little difficulty in giving the anæsthetic. After having put the patient under the influence of the anæsthetic by the ordinary Allis inhaler, I lay this aside and give only chloroform, which is administered by means of a good-sized pledget of cotton held in ring forceps. The anæsthetiser must then be on the alert at every possible moment to place the chloroform over the patient's mouth and yet never get in the way of the surgeon. This can be well managed by a skilful anæsthetist. In any other method the anæsthetic must be often interrupted to operate, to cleanse the mouth of blood, &c. Fourthly, the mouth being gagged open, if the operation is intraoral, the interior of its cavity can be seen very

readily, especially if with the gag, as in Dr. Mears's mouth-gag, there is a tongue-depressor to keep that somewhat unruly member out of the way. If not, then the tongue is controlled by a ligature passed through it. The soft palate can be lifted by a blunt hook, and adenoids removed from the vault of the pharynx with the aid of sight as plainly as if they were on the face. The arches of the palate, the tonsils, the posterior wall of the pharynx, the roof of the mouth, the cheek, &c., can always be seen and reached with that certainty which accompanies sight. A forehead electric light (especially that of Nevius) is of great assistance. Even where there is no street current, the storage battery promises to enable us to operate anywhere. Fifthly, there is no spluttering of blood into the face of the operator, and therefore no interruption of the operation, especially if he wears glasses, no stopping to cleanse them, and then to disinfect his hands afterwards. There is also but little accumulation of blood in the mouth, for if the face is turned a little sidewise the blood runs out of the corners of the mouth very readily, and what does not run out can be sponged out. In removal of the jaws, both upper and lower, this will be especially appreciated as a great advantage. In no operation is it of more value than by the clear view it gives in cleft palate.

In operations on the lips, as in hare-lip, epithelioma of the lip, &c., I have combined with this position, with great advantage also, a method of minimising hemorrhage and annoyance from it, by not cutting through the whole thickness of the lip at one stroke, but by dividing first the skin, then the muscles by several incisions, till I meet at one level or another the coronary or other blood-vessels, and then I either clamp them or ligate them. To this method I drew attention in the *American Journal of the Medical Sciences* for June, 1894.

I may incidentally allude also to the use of a very slight Trendelenburg position in certain other operations, especially in removal of the breast, Estlander's, Schede's, or other operations on the chest, in all operations about the shoulder, the neck, or the head. In operations on the brain, I usually elevate the head to diminish the congestion of the brain, and so lessen hemorrhage. In the other cases, I place the table at about an angle of, say, five degrees or thereabouts, lifting the foot of the table perhaps three or four inches above the level of the head. This, so far as the patient is concerned, is practically level, but neither the solutions used nor the blood that may flow will run upward towards the waist of the patient. We therefore avoid soiling the night-dress, under-clothes, blankets, or other coverings. This is not only a great advantage in the mere matter of cleanliness, avoiding the need for changing the soiled under- or over-clothes, but also a great

advantage in that the patient is not chilled by these clothes becoming wet with solutions, which, though at first warm, very quickly become cold.—*Annals of Surgery, July*, 1897.

59.—THE TREATMENT OF VERTEBRAL FRACTURES.

The concensus of professional opinion in regard to the prognosis and treatment of vertebral fractures, as expressed by the majority of text-books, is to the effect that these lesions, with the exception of those involving only the spinous processes, are dangerous and life-threatening; that when they are associated with symptoms of spinal compression, the prognosis is almost absolutely hopeless; that the best that surgery can do is to treat them conservatively, keeping the patient on a water-bed and allowing Nature, if she will, to bring about union; that manipulations in the direction of reduction are either to be avoided, or, if employed, are to be used only in exceptional cases and with very great care, and, as a rule, all operative procedures, at least in the early stages of these cases, are to be avoided. This teaching is mainly based on the results of isolated cases reported singly by a large number of observers. There seem to be but few surgeons who have had an extensive experience with this class of injury, hence the communication of Poller (*Archiv für Chirurgie*, 1897), based on an extraordinary personal experience of upwards of thirty cases, all observed within the last five years, is of more than usual interest. The cause of the injury in his cases was almost without exception, a heavy weight coming from above and forcing the unfortunate ones forward, or, as he described it, shutting them up like a pocket-knife. The result of pressure thus exerted was to crush and drive into each other the anterior portions of the vertebral bodies, forcing back the posterior portions in the direction of the spinal canal. The laminæ and their processes were often torn from their attachments or otherwise injured. His patients often stated that they heard a crack in the back, after which, from increasing pressure of the descending mass, they lost consciousness. In some few cases the fracture was due to a fall or direct force or from a bending backward. The lesion was usually situated in the lower thoracic and upper cervical vertebræ, this corresponding to the well recognised rule that fractures are most likely to occur in the regions uniting the more and less movable portions of the spinal column. There usually appeared at the seat of the injury a more or less distinct hæmatoma, which did not, however, obscure the deformity, easily felt by passing the finger along the line of spinous processes. This deformity appeared as a space or break in the mid-line, sometimes over an inch wide.

Crepitus and preternatural mobility usually could not be detected. Sometimes in transporting these patients a distinct grating sound could be heard.

Diagnosis was as a rule readily made from the obvious deformity and sometimes abnormal mobility, together with the associated symptoms of injury to the cord. In the absence of typical symptoms, should there be excessive localised tenderness to pressure associated with a history of a crushing force bending the body forcibly forward on the pelvis, it is safe to conclude that the bones have been broken. Should the lesion be confined to the spinous process or posterior part of the arch it is likely that in a few days the patient will be able to raise himself in bed, and will do this, in spite of the prohibition of the surgeon, thus proving conclusively that no extensive bone lesion is present. Together with fracture, there is frequently luxation, the vertebral body being forced backward, or possibly forward, in which case it may be felt on palpation through the abdomen, or in the case of the four upper cervical vertebræ, by examining the posterior pharyngeal wall. The author gives a brief but very clear outline of symptomatology dependent upon the pressure of displaced bone, calling attention to a diagnostic point of extreme importance—*i.e.*, the time at which pressure symptoms develop. Immediate palsy and sensory disturbances point to a primary crushing; these symptoms coming on later, in the course of hours or days, are suggestive of bleeding or inflammation. He states that the prognosis of all these fractures involving the posterior part of the arch or the spinous processes alone, without injury to the cord or the nerves, is absolutely good, the patients completely regaining their strength and often the full mobility of the back. Fifteen of what he calls favourable cases are reported.

Treatment on an average was continued for four months. It is interesting to note that one case of priapism and two of vesical and rectal paresis recovered completely. The treatment consists in placing the patients absolutely at rest in bed, the kyphosis being corrected by carefully applied pads, later followed by extension and the application of Sayre's plaster-of-Paris dressing. In three cases in which the posterior projection was very marked, the deformity was reduced under ether. Electricity, massage, and douches were employed persistently to restore the muscles to their full tone. Motion was normal after recovery in two-thirds of all cases.

In nineteen cases the fracture was complicated by injury to the spinal cord. Thirteen of these died; six completely, or almost completely, recovered. The situation and pathology of the lesions are described, and the cause of death noted in the fatal cases. This usually came from the urinary system. The

treatment adopted was forcible extension and reposition of fragments under chloroform. As to the technique of this procedure, the patient was fully anæsthetised and extension straps were secured to his head and fastened to a bar which was seized by a powerful assistant; two assistants then seized him by the ankles, and all three pulling together at the word made sufficient traction to lift the patient from the bed. The surgeon, with one fist protected by a padded towel, then proceeded to knead and force the bone into position. At times the bones could be felt springing into their proper place as impaction was relieved. It is pointed out that the dangers and disadvantages of this procedure are practically *nil*. Its advantages are evident. Twenty-two of the author's cases were forcibly reduced in this way, and in not a single instance was even partial paresis or anæsthesia produced; and in at least one case there was almost immediate restoration of motion and sensation, previously totally abolished. The subsequent treatment of these cases was most carefully conducted. They were never allowed to move from the bed in less than two months, in the meantime every precaution being taken to avoid bedsores and prevent cystitis. When it was evident that the bones had become well united, the patients were extended daily as for the application of a plaster bandage until they could endure this treatment for from twenty to thirty minutes at a time. A plaster bandage was then applied, and they were placed in a wheeled walking chair, or given crutches. In vertebral fractures the plaster dressing was not applied. Special caution is given against getting these patients out of bed too soon, and against allowing them to begin their work before a sufficient time has elapsed for complete consolidation, since recorded cases show that slow inflammatory processes are likely to be set up, followed by softening and great deformity.

The author concludes by stating that in all cases of vertebral fractures with symptoms of compression and forward angulation of the spinal column, immediate replacement under ether is indicated. This communication of Poller's is chiefly valuable because it will lead us to look more hopefully on cases of fracture followed by symptoms of spinal compression, and, aside from operation, offers a promising therapeutic measure, which is shown at most to be harmless.—*Therapeutic Gazette, June* 15, 1897.

60.—PENETRATING WOUND OF THE HEART: RECOVERY.

Recovery from penetrating wounds of the heart is so rare, that the following case, operated upon by Dr. Parrozzani, at the Hospital of Santa Maria della Consolazione, in Rome, and

communicated to *The Lancet* of July 31 by Dr. G. Sanderson Brock, is of very unusual interest. On the night of April 18, a porter, aged 32 years, of very robust constitution, received a stab from a dagger in the seventh left intercostal space in the mid-axillary line. Five hours afterwards he presented all the symptoms of excessive hemorrhage. There was evidently no time to be lost, and he was operated on at once. An incision was made through skin and muscle commencing at about one and a quarter inches (three centimetres) from the margin of the sternum, in the fourth intercostal space, along which it was carried for a distance of five and a half inches (fourteen centimetres). It was then continued at right angles to its former direction downwards along the mid-axillary line, including the dagger wound in its course, as far as the upper margin of the ninth rib. The pleura was next incised at the level of the fourth intercostal space, and the fifth, sixth, seventh, and eighth ribs, with the attached pleura, cut through in the vertical line. A triangular-shaped door or shutter, to which the costal cartilages acted as a hinge, was thus formed. The pleural cavity was found filled with blood, and the pericardium presented a wound one inch (two and a half centimetres) in length, from which at regular intervals issued a small jet of blood. The opening in the pericardium having been enlarged to nearly two and a half inches (six centimetres), the cavity was freed of the small quantity of blood it contained. The blood had not accumulated in the pericardial sac in any very considerable quantity owing to the fact that the wound in the latter, being at its most dependent part near the apex of the heart, had allowed the blood to escape readily into the pleural cavity. This was a fortunate circumstance, since the usual cause of death in these cases—namely, the fatal pressure exercised upon the heart by the blood accumulating in the sac around it—was here absent. The apex of the heart presented a wound about three-quarters of an inch (two centimetres) in length, from which the blood spurted in small jets at every beat. The pulsations had become so extremely feeble that it seemed as if they were about to stop. Introducing the little finger into the wound, Dr. Parrozzani found that it passed into the left ventricle obliquely, but quite freely from the apex towards the base. The inserted finger served the double purpose of checking the hemorrhage and of fixing the apex of the heart so that the wound could more easily be secured. A large curved needle armed with silk was now passed deeply through the whole thickness of the myocardium, but without touching the endocardium, the little finger being withdrawn from the wound and the thread rapidly knotted. The entrance of the needle into the myocardium caused the heart to throb vigorously, and the withdrawal of the finger was followed by a

gush of blood completely flooding and obscuring the field of operation. The wound was, however, effectually closed by three more stitches, the blood-clots cleared out of both pericardial and pleural sacs, and the "shutter" in the chest-wall closed. The operation lasted an hour and a quarter. No chloroform was used, but twelve subcutaneous injections of ether, and five of camphorated oil, and a few of caffeine were administered. A saline solution (1,500 grammes) was introduced by hypodermoclysis, and thorough autoinfusion (by means of Esmarch's bandages) was practised. One hour after the operation the pulse became quite perceptible. The wound healed by first intention, and no complication in myocardium or pericardium arose during convalescence. The temperature rose to 102° F., but this was probably connected with a slough which formed in the right pectoral region where the saline solution was injected. On May 26, thirty-eight days after the operation, the patient had nearly recovered from his profound anæmia, and said he felt quite well.

According to Professor Tassi (in whose clinic four of them occurred), eight cases of wound of the pericardium or of the heart and pericardium have been operated upon in Rome during the last six years; of these, four involved the pericardium alone, and four the pericardium and one or other of the ventricles. Of the former, three were successful; of the latter, two survived for only a few hours, one died after eight days from anæmia, while the fourth—that related above—has proved entirely successful. There appear to be only two other cases recorded of the kind, where operative interference was attempted.

Dr. Parrozzani has since operated in a similar case—that of a young woman who was stabbed through the heart by another woman. The mode of procedure adopted was the same, the injury being again in the left ventricle. The patient, however, died on the second day, and on post-mortem examination it was found that the inter-ventricular septum had also been penetrated.—*Boston Medical and Surgical Journal, August* 19, 1897.

61.—INJECTIONS OF ARTIFICIAL SERUM AS A MEANS OF PREVENTING DEATH AFTER SEVERE BURNS.

[The continued heavy mortality after severe burns warrants the insertion of the following leading article, taken from the *New York Medical Journal,* August 14, 1897:]

Professor Tommasoli, of Palermo, contributes an important article to the *Monatshefte für praktische Dermatologie* for July 15. After mentioning the good results of serum treatment in certain skin diseases, which he regards as due to chronic

infectious poisoning or to self-intoxication, he reports two cases of severe burns in which the treatment was resorted to. The first case was that of a woman, 60 years old, who was admitted into the department for incurables of the hospital on December 2, 1896, suffering with scalds of the first, second, and third degrees. Almost two-thirds of the front of the body, from the face to the lower limbs, was badly damaged. On December 4 the patient seemed threatened with speedy death; diarrhœa and delirium had already set in. It was now that the author asked to have her transferred to his department, and he resolved to try subcutaneous injections of the usual form of artificial serum containing sodium chloride and sodium bicarbonate. The first injection, of about ten ounces, was given on December 10. On December 11 about a quart was injected, divided into two portions. On December 12 the same amount was given in one injection, and the patient was kept immersed in a bath all day. On December 13 a quart of serum was given in two injections. Towards evening on December 14 the patient died, after a vain endeavour had been made to inject the serum into a vein. This first trial, then, was unsuccessful, but Tommasoli looked upon the case as having been not without value, for he had learned from it that a person severely burned bore the injections very well, and he had observed that after each injection the severest symptoms had abated, and the patient been rendered quiet for several hours. He concluded that, if the treatment had been begun earlier and associated with the use of antiseptics and local sedatives, more could have been accomplished than transitory improvement.

On March 12 a second patient with extensive burns was brought to his clinic. He began with the new treatment at once, and the result was a brilliant fulfilment of his expectations. The patient, a lad 20 years old, had burns of the first, second, and third degrees affecting almost the whole of the right side of the chest, the right axilla, the anterior, inner, and posterior aspects of the right arm, the upper third of the forearm, and the hand of the same side, almost the entire back from the shoulders to the buttocks, and nearly the whole of the right buttock. On the day of the patient's entrance only a dressing of Carron oil was applied. On the following day, March 13, an injection of about eight ounces of artificial serum was given; on March 14, one of about ten ounces, and on March 15, one of about thirteen ounces. At this time the patient took a bath. On March 16, local treatment with iodoform was begun, but it had to be given up in a few days, owing to symptoms of poisoning. On March 17, another injection of about thirteen ounces was given; on March 18, one of about sixteen ounces; and so on until April 6. During the whole of this time the patient was in tolerably good condition,

although tormented with pain, and then he improved rapidly, so that early in April he considered himself well in so far as his general health was concerned, and the very extensive burned surface had assumed a favourable appearance. On May 3 the patient left the clinic, although it was still to be desired that skin-grafting should be practised.

As regards the experiments on animals, a full account of them is to be given by Dr. Azzarello at some future time, but Tommasoli mentions some of their features. An experiment of Klebs's was almost exactly repeated on rabbits and dogs. The hind legs of these animals were scalded in water heated gradually to 158° F., and all of them that were not subjected to this treatment died in from thirty-eight to forty-eight hours. On six rabbits, of the same hairiness and weight as the check animals, injections of about two ounces of artificial serum were practised immediately after the scalding. Of these six, two survived and four died within the first twenty-four hours. It is worthy of note, says Tommasoli, that in four dead rabbits the fluid injected was found still in the meshes of the tissue, in the form of an infiltration. In dogs the results were better; out of ten to which daily injections of from five to six ounces of serum were administered, only two died, and in a few hours after the scalding. All the check animals died within two days. But this is not all, says Tommasoli. The blood of the scalded dogs that had not had serum injections, taken before they died, also an extract made from their flesh, when inoculated upon healthy dogs in quantity proportionate to their weight, killed them; but two dogs thus inoculated and then treated with serum injections survived.

62.—A CASE OF DRY GANGRENE OF BOTH LOWER EXTREMITIES COMPLICATING ORDINARY SCARLET FEVER; DOUBLE AMPUTATION; RECOVERY.

By A. E. Pearson, L.R.C.P. Edin., M.R.C.S. Eng.,
Medical Officer, Leeds City Hospitals;
and
H. Littlewood, F.R.C.S. Eng.,
Hon. Surgeon to the Leeds General Infirmary.

A boy, aged 4 years, was admitted to the Leeds City Infectious Diseases Hospitals on September 14, 1896, suffering from scarlet fever. Malaise, headache, vomiting, and sore throat occurred on September 9, the rash being first seen on September 10. He had suffered from chicken-pox twelve months previously, and from measles three years before. It was elicited from the

friends that the family were strongly susceptible to rheumatic affections, the father having died during an attack of acute rheumatism. A sister also had suffered from severe rheumatic fever. On admission the child presented nothing beyond the ordinary symptoms. The tongue was swollen, reddened, and showed enlarged papillæ. The tonsils were congested and œdematous, with small necrotic patches. There was also general faucial and pharyngeal congestion. The submaxillary glands were moderately affected, and a characteristic eruption was noted in the usual situations. On September 17, being the ninth day of the disease, it was noticed that there were numerous small discolorations (which seemed to be subcutaneous hemorrhages), extending in both lower limbs from the toes to within two or three inches of the knees, anteriorly and posteriorly. At this time the faucial disturbance had very considerably abated, though congestion was still evident, a clean ulcer being noticed on each still slightly inflamed tonsil. The temperature was 101° F. Desquamation of cuticle was observed at the upper part of the chest and neck. Day by day the discoloration of the limbs became more marked, though still continuing to be somewhat patchy, lividity being most intense at the toes and feet, and becoming less so from below upwards. On September 20, a note informed us that the limbs retained a considerable degree of warmth, probably somewhat exaggerated by the more or less continuous application of artificial heat, and that in neither limb could pulsation in the femoral arteries be distinctly felt. The condition now appeared to give the patient considerable pain, apparently of an intermittent character, and the discoloration had spread to some four inches above the knees anteriorly, and to slightly above the centre of the popliteal space posteriorly, the distribution being almost exactly similar in both limbs. From September 20 to September 25 the temperature subsided to normal, and the upper parts of these areas were less discoloured. On September 30 (twenty-second day), an oblique line of demarcation had formed, roughly extending in both limbs to three inches above the knees in front, and to the centre of the popliteal spaces behind. At this time there was noticed some slight degree of cardiac dilatation, and a suspicion of roughness of the first sound at the apex. Mr. Littlewood saw the patient on this date, and advised amputation. On October 3, after a brandy and milk injection per rectum, the patient was put under ether, and Mr. Littlewood amputated the right thigh by a modified circular operation. All the available healthy skin above the gangrenous part was retained, an incision being carried upwards on the outer side for some four inches. The femur was divided at about the junction of the middle and upper thirds. The blood was very thin, coagulating slowly and

imperfectly. The femoral artery was patent. The patient tended several times to collapse, requiring subcutaneous injections of brandy. Silkworm gut was used for stitches, and the dressings were cyanide gauze and iodoform. The patient recovered well from the operation, and though some rise of temperature was noted on subsequent days, it would appear to have been due to ulceration and some septic inflammation present at the line of demarcation, separating the healthy and diseased parts in the other limb. The operation wounds of this amputation healed almost entirely by the first intention, except at the outer angle formed by the flaps, where some slight sloughing took place. The parts were drained by indiarubber tubing for some ten days. On October 10, a week after the first operation, amputation through the left thigh was performed by Mr. Littlewood. The like anæsthetic precautions and incisions were taken and made. The patient bore this operation much better than the first. The wounds were similarly drained and stitched, and they also healed by first intention. After the second operation the patient made rapid progress, and was allowed to be wheeled about in the ward on November 3. When seen later at his home, the stumps were found to be well padded and furnished. The patient had free power of flexing, extending, abducting, and adducting the stumps, and would shortly be able to wear artificial limbs.

Description of the parts removed.—Both legs were dry and mummified, the skin having a yellowish translucent appearance. Just below the amputation line there was an ulcerated area of skin about half an inch wide and nearly surrounding the limb. On dissecting the vessels they presented similar appearances on both sides. The coats of the vessels appeared normal. In the popliteal arteries, about the middle of the popliteal space, was a soft, reddish-white clot, which did not fill up the whole lumen of the vessel. It could be easily separated from the intima, the clot being about an inch long. Below this to the bifurcation of the vessel there was some loose clot of similar appearance, but above the vessel was empty. There was no clot in the posterior tibials at the ankles. There was a clot in the popliteal veins at the same level as that found in the arteries. It was more like a venous clot, darker in colour, and quite filling up the lumen. It was not adherent to the intima. The clot in the right side appeared to be undergoing some decomposition changes. Both clots occupied about an inch of the lumen. Below this, in the tibial veins, there were some coagula of the same colour, but not filling up the vessel. Above the clots the veins were empty, as also were the veins at the ankles.

Remarks.—This case appears to us to be of very considerable interest, and almost unique in its occurrence. It is of interest from two points of view—firstly, as an extremely rare

complication in connexion with scarlet fever, and, secondly, from the infrequent occurrence of dry gangrene in so young a subject, apparently free from diseased blood-vessels. We have been unable, in searching the literature of the subject, to find records of a similar case. Osler, however, incidentally mentions that symmetrical dry gangrene is a rare complication of scarlet fever, and there is to be found recorded in Holmes's "System of Surgery" a case of gangrene of the left leg complicating scarlet fever in a woman aged 40 years. As to the *causa causans*, there would appear to be two factors which operated—an extremely thin and poor state of the circulating fluid, and a debilitated condition of the circulatory system from the specific febrile illness. The former was noted during the operation, and the latter was observed from physical signs during the illness and before amputation. It will be noted in the preceding account of the dissection of the limbs, that the thrombosed clot was of some considerable extent in both the arterial and venous vessels of the popliteal areas. It might be urged that the clot was of embolic origin, occurring in a patient whose family were strongly predisposed to rheumatism. In this argument it should be remembered, that though there was evidence of circulatory enfeeblement and cardiac dilatation, there were no signs of gross valvular lesion, and that the clotting, though extending to the bifurcation, would seem to have commenced at the middle of the popliteal arteries. The vessels, in the dissection, showed no evidence of disease. Another point of some interest was the absence of any inflammatory disturbance in the wounds after amputation of the limbs, both operations having been performed whilst the patient himself was in an infective state, and in close proximity to other cases of scarlet fever. The patient was, however, isolated in a disinfected room for the operations.—*The Lancet*, *July* 10, 1897.

63.—SOME SURGICAL POINTS IN DIABETIC SUBJECTS.

By R. H. Marten, M.B., B.C. Cantab., M.R.C.S. Eng.,

Adelaide, S.A.

According to Dr. Prout, persons with confirmed diabetes mellitus live, as it were, on the brink of a precipice. This is true not only in medical cases, but also in surgical injuries and diseases, and what would be in healthy subjects simple lesions, become most serious amongst those persons who are passing sugar in their urine. And according to Treves, "Diabetes offers an almost positive bar to any kind of operation, as wounds do badly, gangrene very readily follows an injury, and amputation

is almost always fatal," and I don't suppose that any member of this Association would attempt any operation without previously examining the urine for both sugar and albumen. As examples of wounds doing badly, I would mention the case of an old lady who for the last seven years has been a diabetic, and who, five months ago, had some hot fomentations applied to the abdomen for pain over the cæcum. Unfortunately these produced blisters (three), each about the size of a sixpence, and although every possible attention has been paid to them, instead of healing up as one would expect, they have gradually increased in size and depth, and are now always covered with a superficial slough. She was fairly hale and hearty before the blisters appeared, but the pain and worry of these lesions are rapidly wearing her out. Another case was an old lady with a small traumatic ulcer on the front of her leg. This rapidly spread, and the patient died of acetonæmia in a few weeks, although previously she had had good health. Another was an old lady of 77, who had suffered from diabetes for about four years. She developed a small ulcer between the right little toe and the second toe, and the pain arising therefrom brought about a fairly rapid end. A gentleman of 55, who had had very marked diabetes for some years, accidentally scraped the skin off his shin, and produced an ulcer, which spread with sloughy edges and base to an alarming extent. He was laid up in bed for several weeks, and suffered intense pain; but by very careful nursing, dieting, and codeia pills the wound eventually healed.

Three of my patients have had biliary colic due to gall-stones, and although in ordinary cases an exploration of the gall-bladder might have been suggested, no such treatment was undertaken, and one of these patients with a second attack of colic died very quickly of diabetic coma. Two cases were head injuries. One, a confirmed diabetic, fell down and sustained a slight cut on his head, and within a few hours began to show signs of commencing diabetic coma, and died within three days. Another was a gentleman who fell down the theatre steps, and from that time complained of thirst, loss of flesh, and attacks of giddiness. On examining his urine it was found to be highly saccharine, and has remained so ever since. I cannot say if this should be classed as a case of traumatic diabetes, as I never had an opportunity of examining his urine before his fall. Two patients came complaining of troublesome boils, one on the cheek and the other on the head. Both had diabetes, and although the boils have disappeared, their health is far from well. One patient had an enormous carbuncle on his back, and he died within a week of diabetic coma. It is a question, to my mind, as to whether any surgical treatment should have been undertaken. I did no more than make a crucial incision, and I doubt very much if a carbuncle in a diabetic would stand much

scraping and carbolising. Two patients, who had syphilis years before, developed gummata on their legs shortly after the sugar appeared in their urine, but with iodide of potash and one-drachm doses of liq. hydrarg. perch. they healed up as well as in an ordinary subject. One woman, who was in the last stages of diabetes, developed at one and the same time three of the worst whitlows I have ever seen, but they healed up before she died, although they left her hands absolutely crippled from extensive sloughing of tendons. One of the most troublesome affections I have encountered has been a balanitis in men. I have had three such cases, and they certainly try the patience of both the practitioner and the subject. The glans is covered with a superficial serpiginous ulceration, and the edges of the prepuce frequently crack and bleed. There is no doubt that the saccharine urine causes this, and the only way to get rid of it is to take special care to wash away all urine after micturition, and dry the part well, and apply equal parts of olive oil and lanoline; but as it always occurs in old men, generally with enlarged prostates, there is a troublesome dribbling of urine, which continues long after micturition is finished, and keeps up the irritation. One of the balanitis cases was a man of 47, who fractured his leg on New Year's Eve last, and whilst lying up for his fracture developed balanitis and eczema scroti; his urine was highly saccharine, but, strange to say, since he has been getting about again, the sugar has disappeared, and with it the balanitis and eczema.

I think that, whenever a man of over 40 comes complaining of balanitis, his urine should be examined for sugar, just as we do in all cases of women suffering from pruritus vulvæ. I have had several patients with diabetic pruritus vulvæ, and have always recommended them to use the solution of hyposulphite of soda, as recommended by Lawson Tait, but not always with the satisfactory result of which he speaks. Out of thirty-six men whom I have treated for diabetes, seven came complaining simply of loss of sexual power, and I feel certain that you can almost always date the onset of diabetes in men from this symptom alone, and their urine should always be examined for sugar. In two or three the power has completely returned, but in the remainder the loss is permanent. I need only refer in passing to the numerous cases of eczema which occur in the diabetics, as skin diseases can hardly be classed as surgical. With regard to the prognosis of these cases, any lesion, be it ever so slight, in a diabetic subject is of extreme gravity. This is scarcely to be wondered at when it is considered how greatly the nutrition of the parts is affected. Out of sixty-seven diabetics, fifteen have had one or other of the above-mentioned surgical complications, and five died directly from the complication who otherwise might have lived for years. With

regard to treatment, the indication is to attack the diabetes on ordinary plans, and keep any wound as aseptic as possible; but I am sure any practitioner who has had much to do with surgical lesions in such subjects, must get tired of them before they have healed up.—*The Australasian Medical Gazette, August* 20, 1897.

64.—TWO CASES OF TUBERCULOUS DISEASE OF THE KNEE-JOINT TREATED BY IODOFORM INJECTIONS: RECOVERY.

By Edward B. Holwell, L.R.C.P. Ed., M.R.C.S. Eng.,
Honorary Surgeon to the Leeds Public Dispensary.

[The following cases, related by Mr. Holwell, illustrate the value of this method of treatment, at least in some instances.]

Case 1.—Tuberculosis of Knee in a Man aged 25 years.—H. L., aged 13 years, a tall, overgrown youth, with very pink and white complexion and red hair, came to me on May 1, 1885, with an oblong swelling at the inner side of the right knee; it extended upwards and outwards for 3½ above and 1½ inches below the patella; pain complained of over inner condyle. He first noticed the enlargement in February of the same year; there was no history of an injury. He was ordered rest. On June 10 the tumour was much the same but now presented distinct fluctuation. Under ether, and using the carbolic steam spray, I made a free incision, got 4 ounces of pus and a quantity of partially organised lymph from the abscess, and having thoroughly cleaned out the cavity, dressed with McGill's salicylate silk waste and iodoform and put on a back splint, I could find no communication with the joint. The wound soon healed, but the joint never quite recovered its natural size. On April 12, 1896, the patient, now aged 24 years, came to consult me for a discharging sinus at the inner side of the right knee, and complained of pain on movement of joint, and as his work necessitated an amount of kneeling it caused him great inconvenience, and he was unable to walk with any degree of comfort. On passing a probe for ½ inch I found the sinus divided into two passages, one upwards and outwards above the patella, and the other upwards and inwards towards the flexor tendons. I was unable to find any communication either with the former suppurating cavity or with the joint. The knee was enlarged and had lost its natural contour, and was also œdematous. On April 14, ether having been administered, I opened up the sinuses as far as they were superficial, and having scraped away all diseased tissue, packed them with iodoform and gauze. They were four months in healing up. Shortly afterwards two small points broke out, discharging a thin-looking pus; they continually healed up only to open and again discharge. On January 26, 1897, the knee presented a very enlarged, rounded appearance, all the natural points of the joint having disappeared and bulged towards the outer side, the patella being displaced outwards. There was distinct fluctuation of a pulpy character. The patient complained of severe pain on any joint movement, and could neither fully flex nor extend the leg; altogether it was now a typical tuberculous joint. In consultation with Mr. W. H. Brown, we agreed that before I proceeded to

excise the joint (which we warned the patient might even be necessary) to give a trial to injection of iodoform and glycerine. On January 28, having drawn off five ounces (℥ v) of slightly clouded synovial fluid by aspiration, I injected through the same cannula, 2 drachms of glycerine and iodoform; this was followed by great pain and swelling the same evening. On January 29, the knee was much distended and very hot, but there was no increase of temperature. Ten days afterwards (February 6), the knee having recovered its former size, I again operated, but only obtained 1 ounce of synovial fluid, coloured and smelling strongly of iodoform. I injected 2 drachms as before. The same night there was great pain and swelling but no increase of temperature. The third aspiration was performed on February 14, removing 2 drachms of stained fluid. I injected 2 drachms of glycerine and iodoform. The joint looked much healthier and felt much firmer. This time there was hardly any swelling afterwards nor pain. On February 23, two drachms of stained synovial fluid were removed, and I injected 2 drachms. This was not followed by pain nor swelling until next day, when there was very little swelling. The fifth injection was made on March 3. I had great difficulty in getting into the joint, the knee being so much firmer and knit together. This injection was followed by no pain or swelling. On March 21, the sixth injection, for the first time there was no fluid in the joint. The knee was very much smaller. On March 29, the seventh injection, I had difficulty in injecting only 1 drachm of fluid. On April 15, the eighth injection, I injected again 1 drachm. On April 30, the ninth injection, I was only able to get ½ drachm into the knee, and I believe it was only into the track of the trocar. He could walk a short distance without difficulty or pain. The joint was nearly its natural size, but there was slight stiffness. On May 26, eighty-eight days after the first injection, the patient walked nearly two miles and felt no worse afterwards. There was very little difference in the size of the two knees. He only complained of slight stiffness, and informed me that his knee felt stronger and more to be relied upon than for several years. In this case, although I injected nine times, I believe the last three were unnecessary, though the great difficulty is to know when our object is attained. There is no doubt that a few years ago, before the present treatment was known, this knee-joint would undoubtedly have been excised if not amputated. June 26. He has now returned to his work, at least has my sanction to do so.

Case 2.—Tuberculosis of Knee in Child aged 8 Months.—M. K., a Jewish child, aged 8 months, a sickly, puny infant, came to the out-patient department of the Leeds Public Dispensary, March 5, 1896. The right knee was greatly enlarged, pulpy, and with nearly all shape of the joint lost, presenting a barrel-like appearance, and flexed almost at a right angle, and a white cheesy colour. There were two discharging sinuses, one at the outer side passing upwards and inwards, the other extending completely across the joint, probably, however, extra-articular. Under chloroform I dilated the sinuses, thoroughly scraped them out, and having inserted two drainage tubes, put on a back splint and dressed with gauze, iodoform, and wool. On April 2, the knee was larger and the joint full of pus, and felt on movement to be entirely disintegrated. Under chloroform I made a free incision into the joint from the outer side, and a counter incision at the inner side. The joint was washed out with corrosive sublimate solution 1 in 2,000 and a drainage tube carried across the joint from one incision to the other. It was dressed with gauze, iodoform, and wool, and put on back splint. On April 14, the knee was much smaller and firmer, and the child generally improved in health. The drainage tube was taken out, and the knee dressed as before. On May 7,

the discharge had ceased and the incisions healed, but there was severe superficial dermatitis. The knee could not be flexed beyond a right angle, and that caused pain, which made me still suspect mischief in the joint. On November 26, 1896, the child was again brought to me. The knee was very hot and inflamed, and there was doubtful fluctuation. In a month's time, having got things quiet, I applied a pot leg, and lost sight of the case till March 1, 1897, when, on removing the plaster, the knee, with the exception of the discharging sinuses, appeared as bad as ever. There was considerable swelling, redness, and œdema. The exploring needle found no pus, however. There was also severe dermatitis, and the skin was in a filthy discharging state. The limb was put on a back splint, and I ordered hot fomentations every four hours. On March 18, the skin having now become quite clean and healthy, and all other treatment failing, I injected glycerine ʒ j, holding gr. 7½ of iodoform in suspension. On March 25, the knee was much improved, smaller, firmer, and could be moved. I injected again ʒ j of glycerine and iodoform. On April 1, the knee was much smaller and firmer. The child now voluntarily moved the joint, which was injected for the third time. I had great difficulty in entering the joint, and could only inject ʒ ss, and most of this I believe was left in the track of the needle. On April 8, I endeavoured to inject for the fourth time, but was unable. The child crawled about, which it had not done for thirteen months. On June 22, no signs of disease could be seen or felt. The shape of the knee was quite normal, and the child moved about as well as any child of 2 years old can do. In this case, it was a very long time before the parents would allow active measures.

As the notes show, prolonged and systematic treatment had been unsuccessfully tried. The rapid improvement, and if one might say cure, under the iodoform injection is therefore very significant, and in future I shall never condemn any joint, no matter how much it may be destroyed, till I have tried what iodoform injections will do; for in both of these cases here reported I had little hope of saving the joint, and movement I never thought to obtain.—*British Medical Journal, August* 14, 1897.

65.—THE IMMEDIATE CORRECTION OF DEFORMITY IN POTT'S DISEASE.

[Mr. Robert Jones introduced this subject at the Liverpool Medical Institution, with a paper and lime-light illustrations. A discussion followed. The question is at the present moment still *sub judice*, and reports are not all as favourable to it as that of Mr. Jones.]

Mr. Jones had operated on a very large number of cases since July, with results which had exceeded his expectations. Sufficient time had not elapsed to allow him to advocate so bold a procedure with any degree of dogmatism. However, with ordinary precautions, no immediate ill-effects followed. He had no case of abscess, no case of disseminated tubercle, and none of paraplegia. Where paraplegia had existed, the extension and pressure had either improved or cured it. He

pointed out the tendency to bony ankylosis in caries of the spine, which was not found in tubercle of other joints. This inspired the hope that the separated vertebræ would become firmly united, and that the danger of the so-called gap might prove illusory. The cases showed the disease in various regions, and some of them exhibited great deformity. The duration of some extended over several years. After describing Calot's method of reduction, Mr. Jones adversely criticised the plaster corset, and advocated a splint so constructed as to keep the spine in lordosis. He found that the curves best suited to obliteration were those occurring in the young, where the disease was active and where the angle of deformity was changing. The curves most easily reduced were those involving several rather than few vertebræ, and those situated in the dorsal region.

Mr. R. W. Murray said that he had operated upon fourteen children, whose ages varied from $2\frac{1}{2}$ to 9 years. They were all selected cases, the children, apart from the spinal trouble, being in good health. The immediate results had been entirely satisfactory, but in one case, where the disease was in the upper dorsal region, weakness of the upper limbs and exaggerated knee-jerks appeared one month after operation. He drew attention to the high mortality of tuberculous disease of the spine amongst the poor, and also to the remarkable absence of the formation of new bone. This being the case, he feared that the gap formed between the bodies of the diseased vertebræ, after the forcible correction, would not be filled up by bone sufficiently strong to bear weight. Should this prove to be the case, the patient would have to rely indefinitely upon instrumental report or have a return of the "hump-back." While this method of operating was still in the experimental stage, he intended to rest content with what he had already done, and to await further results. In the immediate future he would operate only on cases in which paralysis existed.

Mr. Rushton Parker said that he had performed this operation both with and without an anæsthetic; in the latter case, there did not appear to be much pain caused by the proceeding. He considered the Thomas's double hip splint a great improvement upon the plaster jacket. He looked forward with hopeful interest to the application of Calot's method.

Mr. Thelwall Thomas drew attention to the fact that forcible interference with tuberculous bone disease did not produce paralysis, abscess, or dissemination of tubercle — three theoretical "bogies," which had been handed down from text-book to text-book. Recent experience in forcible dealings with joint disease, gave surprisingly good results, and he felt sure that permanent success would follow a large number of cases treated by Calot's method.

Mr. George Hamilton pointed out that in estimating the amount of improvement in paralysed cases after Calot's method had been used, it was important to recognise that many such cases recovered from the paralysis under the classical methods of treatment. He could quote many such in his own practice.

Mr. A. Davies thought that the operation was not justifiable except in carefully selected cases.—*The Lancet, November* 13, 1897.

66.—EPITHELIOMA AND RODENT ULCER.

By Christopher Heath, F.R.C.S.,

Holme Professor of Clinical Surgery, University College, London.

[We abstract the following from Mr. Heath's paper. The illustrative cases have mostly been omitted.]

I have not the slightest hesitation in saying that, in public and private practice, every surgeon must see more cases of epithelioma than in former years. It may be said that we have advanced in our power of diagnosis, that the disease is more thoroughly studied, and therefore more frequently recognised and reported; but, apart from that, there can be no doubt that there are more cases of epithelioma, and I find that the Registrar-General acknowledges this. To what, then, are we to attribute this increase of epithelioma in the upper part of the digestive system? I believe there are two main causes; one is inveterate smoking, that habit having become much more common of late years. The constant use of tobacco, particularly in regard to the tongue, is the first of these two causes, and one of the cases I have to mention is very conclusive on that point. The next element is the great spread of syphilis among the populace; and there can be no doubt about that, I am sorry to say. This I attribute, in a great degree, to the fact that in the army, owing to the foolish abolition of the Contagious Diseases Acts, syphilis has become more rife, and that short service soldiers, who have become subjects of syphilis, marry and convey syphilis to their wives and children, and thus spread it among the populace.

Let us consider what are the characters of the disease called epithelial cancer. At first, owing, in the majority of cases, to some local irritation, there is an over-development of the cell element, which tends to form columns and grow down, and then we have a certain amount of induration, and eventually we have ulceration, with the characteristic eversion of the edges, which we see so commonly in all the cases of epithelioma. In addition to that, and at varying periods, we have the gland implication; in some cases the glands become implicated very

early, in others comparatively late, and it is curious that the position of the cancer seems to affect this a good deal. In the lip, as a rule, it is a disease of old age and slow growth, slowly affecting the glands. In the tongue, which is a much more vascular part, it is a disease of middle life and even of young subjects, and the glands are rapidly affected—so much so, that it makes one almost despair of success in operating. The border line between epithelioma and papilloma is by no means well marked. I have myself seen a case in private of a man who had a warty growth or papilloma of the tongue for some years without any inconvenience, and then all of a sudden it began to grow, and when he came to me a few weeks afterwards there was a well-developed epithelioma in the tongue, which I removed with temporary success, but of which he died eventually. The microscopical examination of the specimen showed well how it may be papilloma on the surface, and then epithelioma developed in the deeper part owing to the constant irritation. That irritation is at the bottom of the occurrence of the epithelioma. If you take any part of the body, and sufficiently irritate it, I believe you may develop an epithelioma in an otherwise healthy person. Epithelioma may attack any part of the face.

There is another disease which is called rodent ulcer. Now, I allow that it is very difficult to be sure in any case, whether it is rodent ulcer or whether it is true epithelioma. I am inclined to consider and treat as rodent ulcer, cases which occur in the upper part of the face in patients somewhat advanced in life. That is an elastic rule, you may say. So it is; but when you find a large number of these cases going through a slow course without any glandular enlargement, then you may fairly say they are cases of so-called rodent ulcer or rodent cancer, for both words are used, which may or may not be varieties of epithelioma, but which have clinical features peculiar to themselves. You must bear in mind there are two distinct forms of this disease: there is the fungating rodent ulcer, and again there is the ordinary ulcerating form sometimes known as Jacob's ulcer, after the Dublin surgeon who first called attention to it. The treatment, of course, is the same for both epithelioma and rodent ulcer—cut it out if you possibly can, and where you cannot, scrape it thoroughly and apply caustic paste, and with care and trouble you may hope to have a firm cicatrix; I have seen cases which cicatrised and got perfectly well.

The following case is an extremely interesting one, because we have the opportunity of seeing the record of it in a very early stage. It is a man who was in the Fire Brigade, who was admitted here on May 28 with a well-marked epithelioma of one side of the tongue. I will recall to your recollection that

he was sent round from the skin department, where he had been attending for some time, and had been taking iodide of potassium, and for a time he had improved; but then he had ceased to improve, and he was sent round to me, and I had no hesitation in saying at once that I was quite sure that the tongue had become epitheliomatous. I had a talk with Dr. Crocker, to whom the man went two years ago with a well-marked leucoplakia of his tongue. The man told me that when a sailor he was in the habit of smoking and chewing tobacco, and as a result the surface of the tongue had become chronically inflamed, thickened, and whitened, and showed very well indeed the appearance that we call leucoplakia. The man's tongue ulcerated, and he went back to the skin department.

The last case that I will mention is one of epithelioma of the penis. It is not very common, but occurs from time to time, and generally in elderly men who have had phimosis. It is undoubted that phimosis seems to be a starting cause of epithelioma of the penis. You can easily understand that if the foreskin is never drawn back the smegma preputii becomes rancid and irritating, and sets up ulceration, which may eventually become epitheliomatous. That is one great argument for early circumcision. The disease does not occur generally early in life; the foreskin being long may lead to other troubles, but epithelioma does not, as a rule, begin till after fifty. There is an intractable ulceration about the penis, generally involving the foreskin and the glans, and in this case I was obliged to amputate close behind the glans penis. Epithelioma of the penis is not a very virulent disease. If you go well behind the disease, I think you have more chance of relieving permanently epithelioma in the penis than you have in many other parts of the body. There were no enlarged glands in the groin in this case, and I hope, therefore, that we may have permanently relieved the patient.

Let me say that the great point is to recognise the disease early. It is everyone's duty, if they get a case of ulceration of any part of the skin or mucous membrane which resists treatment, to remove it. Of course there are cases which are cured readily enough, syphilitic ulceration particularly, and there are others which are to be treated by cleanliness and slight stimulation, but it is wrong to allow a patient to continue for weeks and, I am sorry to say, for months, with an intractable ulcer of any part of an epithelial surface, and as soon as the profession and the public come to the understanding of that, the more thoroughly will our practice be successful.—*The Practitioner, August*, 1879.

67.—THE TREATMENT OF MALIGNANT DISEASE.

By Roswell Park, A.M., M.D.,
Professor of Surgery, Medical Department, University of Buffalo.

[The following is taken from an address by Dr. Park on problems which most perplex the surgeon. The last subject dealt with is the origin of malignant disease, which has perplexed not only the surgeon, but also the pathologist; it should claim also the attention of those entrusted with the public health.]

Is there any measure, drugs or otherwise, which can be regarded as either certain or having any efficacy as against this dread disease? To this, first of all, I would say that in a great majority of cases cancer appears to us as a local affection, which, could it be reached early enough and attacked radically enough, might be extirpated. There is no question but what early and extensive operations in select cases give permanent relief. To bring about this happy result, however, requires the lucky coincidence by which an intelligent patient goes early to an intelligent physician, and has his or her trouble recognised at a time when sweeping operation can be made with prospect of success. It requires also that the disease shall be located in some accessible part of the body, in order both that diagnosis may be more exact and operation justifiable—except those trifling growths upon the surface which may be removed by caustic pastes, if one prefer such a course. The treatment by cancer pastes, especially the removal of large masses by this means, is alike unscientific, barbarous, and damnable. It bespeaks the meeting of two cowards—the patient who is afraid of the knife, and the pseudo-surgeon who is afraid to use it. Could the real truth be known about institutions where this method is practised as a specialty, it would be far more discreditable both to intelligence and to the honesty of those who manage them, than is generally appreciated.

But what should be said of operations in hopeless cases? I maintain that one has a right, and a duty to the patient as well, to operate in absolutely hopeless cases for either one or more of the four following reasons, providing the patient willingly consent. These are:—(1) The relief of pain; (2) the avoidance of constant hemorrhage; (3) the affording of a temporary respite; and (4) the removal of foul sloughing growths, which are an offence alike to patient and family. In cases coming under either one of these heads, the propriety of an operation may be submitted to the judgment of intelligent people, and to the unintelligent the choice of that which one may think well to advise.

A study of the causes of cancer being so inseparable from a discussion of the cell doctrine, one cannot but feel that if there be drugs which influence cell nutrition and cell activity, it is among them that we must look for internal remedies which may have a palliative or curative effect. First among these I place the time-honoured remedy, arsenic, which, so far as I know, can vie only with one of the latest aspirant sto honour, namely, nuclein, for which we shall be ever deeply indebted to Vaughan and his colleagues in the University of Michigan—these being the two remedies which more than any others possess these properties. We certainly lack exact studies demonstrating their power in this direction, but this is another of the investigations to be taken up, when this ideal research laboratory is formally organised. It is difficult to say positively whether any true cancer has ever disappeared completely under the influence of either of these remedies. Nevertheless, I have personally seen remarkable retrocession of large and bulky tumours after the use of arsenic internally, and most encouraging reports have of late come from those who have been using nuclein for this purpose. Still it is well known that spontaneous resolution of tumours is believed in by not a few men of greatest eminence, while for myself personally, its possibility seems to have been clearly demonstrated in more than one case under my observation. Certain it is, however, that in some instances one must either allow this spontaneous retrocession to have occurred, or ascribe the wonderful change to the influence of certain drugs. For my own part, also, I have such faith in the virtues of arsenic, that I prefer to keep all my patients more or less steadily under the influence of the drug in some form for months after operation, while it has seemed to me that I have obtained the best results by using a combination of arsenic, gold, and mercury, in connection with the three haloid elements, chlorine, iodine, and bromine. Whether the benefit which in my observations of this compound, had really occurred, is due to the influence of one or more of its components upon cell activity, or to the fact that the combination certainly serves as an ideal internal antiseptic, I will not attempt to say. At all events there is more rapid restoration of hæmoglobin, disappearance of the anæmia due to poikilocytosis, as well as of the leucocytosis, which is a feature of the cancerous cachexia, than I have known of after using any other drug.

Lastly, without stopping to mention any of the other drugs recently or in time past lauded for this purpose, all of which have so far proved disappointing, I would only mention the modern treatment of cancer by the use of toxins of erysipelas. Having experimented diligently with the toxins, and without other effect save to prove their general inefficacy, I am

compelled to say that in most respects the treatment has proved a disappointment, the results in most of the cases under my observation having been negative; while for every instance in which more or less benefit has resulted, I could bring two or three to bear in which positive injury has resulted. It may be, however, that we are on the right track in this matter, or near it, and need mainly to enlarge our observation and still further use our reason.—*Medical Record, July* 3, 1897.

68.—SPINDLE-CELLED SARCOMA OF THE ABDOMINAL WALL SUCCESSFULLY TREATED BY THE MIXED TOXINES OF ERYSIPELAS AND BACILLUS PRODIGIOSUS.

By Dr. W. B. Coley, of New York.

[We include here the report of the following case, presented before the New York Surgical Society. It is needless to add that there are very few, if any, such cases on record which have been treated with equal success by this method.]

Dr. William B. Coley presented a young woman, aged 18 years, who was admitted to the New York Cancer Hospital, January 1, 1897, on the service of Dr. Joseph Brettauer, for operation for a tumour of the abdomen of two or three months' duration. Before operation it was uncertain whether the tumour was situated in the abdominal wall or involved the uterus. It could be distinctly felt by vaginal examination. An exploratory laparotomy was made by Dr. Brettauer, assisted by Dr. George W. Jarman, January 2, 1897, and the large mass was found to be both intra- and extraperitoneal. Dr. Brettauer regarded it as impossible to remove by operation, and closed the incision, having first excised a portion of the tumour for examination. The wound healed partly by primary union and partly by granulation. The case was then transferred to Dr. Coley's service, with a view of having the toxines tried, and the wound having healed, the injections were begun January 19, 1897. Physical examination made at this time showed the following condition:—"Just above the symphysis pubis and extending upward nearly to umbilicus, to the right of the median line two inches, and to the left one inch, is a tumour, apparently located in the abdominal wall. The tumour is smooth in outline, firm in consistence, and apparently does not involve the intraperitoneal structures." (Copy of history from hospital records.)

The first injection consisted of three minims of mixed filtered toxines, prepared by Dr. B. H. Buxton, at the Loomis Laboratory, from cultures of the streptococcus of erysipelas and bacillus prodigiosus. The erysipelas cultures had been passed through fifty-six rabbits, and had attained an extraordinary degree of virulence. There was no chill following the first injection; temperature rose to 99·8° F.; pulse, 104. January 20, four minims, same preparation; temperature, 99·8°; pulse, 104. January 21, five minims, same preparation; temperature, 99·8°; pulse, 114. January 22, six minims, same preparation; temperature, 98·2°; pulse, 116. January 23, seven minims, same preparation; temperature, 99·6°; pulse, 120. January 24, eight minims, same preparation; temperature, 98·4°; pulse, 116. January 25, nine minims, same preparation; temperature, 99·4°; pulse, 108. January 26, unfiltered toxines were begun, dose one and a half minims; temperature, 99·4°; pulse, 100. January 27, unfiltered, two minims; temperature, 99·8°; pulse, 88. January 28, unfiltered, three minims; temperature, 99°; pulse, 104. January 29, unfiltered, four minims; temperature, 99·2°; pulse, 112. January 30, unfiltered, five minims; temperature, 99·2°; pulse, 112. February, 1, unfiltered, six minims; temperature, 98·4°; pulse, 90. February 2, unfiltered, six minims into tumour; chill, thirty-five minutes; temperature, 100·6°; pulse, 126. February 5, six minims; chill severe; temperature, 103·8°; pulse, 142. February 7, two minims; chill; temperature, 101·6°; pulse, 114. The injections were continued every two days in small doses (two to three minims) until March 3, and then the patient was allowed a week's rest. The last injection was made March 16, 1897.

The entire course of treatment lasted from January 19 to March 16, or two months, during which time thirty injections were given, producing six chills. The improvement was apparent very soon, and the tumour steadily decreased in size, with no softening or breaking down. At the end of six weeks it had entirely disappeared, and at present the abdominal wall is quite soft and normal.

The microscopical examination was made by Dr. E. K. Dunham and Dr. B. H. Buxton, the pathologists of the New York Cancer Hospital, who pronounced the growth "spindle-celled sarcoma." (The injections were continued in moderate doses and with occasional intervals of rest until the end of June, in order to lessen the chances of recurrence. The patient was discharged from the Cancer Hospital July 1, 1897, in perfect health, having gained five pounds in weight. No trace of the tumour or even induration could be detected.)—*Annals of Surgery, August*, 1897.

69.—ON OÖPHORECTOMY IN THE TREATMENT OF CANCER.

By Stanley Boyd, F.R.C.S.,
Surgeon to Charing Cross Hospital.

[Much of Mr. Boyd's paper has had to be omitted here, yet the hopelessness of the treatment in cases of advanced and inoperable malignant disease, make it necessary to draw attention to almost any new method proposed.]

In face of the statistics published of late years, no one can deny that extensive operations have been followed by long immunity from cancer in a considerable number of cases, the frequency and length of the immunity increasing in proportion as the operation practised has been free and carefully and intelligently carried out. I speak of prolonged immunity, for we do not yet know when the liability to recurrence ceases; that cancer germs may lie latent in a lymphatic gland for ten years and then grow, is a fact which I learnt not so very long ago. There are many points in the natural history of cancer which require working out, and with regard to these and to the ultimate results of treatment, no one is so well able to help as the general practitioner. Whoever now publishes a series of unselected cases traced to the end, indicating shortly the state before operation, the extent of the operation, and the subsequent history, does a piece of really good work, and I hope that some of those here present may be induced to share their experience with others. But although operation, carried out with modern completeness, is the only treatment which one can recommend at present in early cases of cancer, there are cases enough in which nothing local can be done, or in which local treatment will almost certainly fail to give long immunity.

On May 20, 1896, Dr. Beatson, of the Glasgow Cancer Hospital, read a paper before the Edinburgh Medico-Chirurgical Society on the reasoning which led him to think that removal of the ovaries might arrest breast cancer. Dr. Beatson showed, in illustration of his views, two cases in which he had carried out the treatment. [The details of Mr. Boyd's cases, with illustrations, are omitted here.] The time has not yet come for drawing conclusions as to the value of Dr. Beatson's suggestion in the treatment of cancer, yet I will, with your permission, lay a few of my thoughts upon the subject before you. It seems to me to be in the highest degree improbable that the relationship between the oöphorectomy and the atrophy of the cancer masses which I have described to you is other than casual. How removal of the ovaries can produce such an effect I do not know, but my working hypothesis is that the internal secretion of the ovaries

in some cases favours the growth of the cancer, acting either upon the epithelial cells or upon the surrounding tissues; consequently, in these cases, removal of the ovaries will leave the tissues better able to cope with the parasitic cells. We cannot for a moment suppose the mere cessation of the menstrual flow to be casually connected with the atrophy; both, most probably, result from the same cause, namely, removal of the internal secretion of the ovary. Why, then, it will be asked, did I remove the ovaries in two women who had passed the menopause? I did so because it seemed to me that cessation of the menses did not by any means prove that the ovaries had become of no more importance, for good or evil, in the body than bits of connective tissue. The internal secretion of the ovary is, doubtless, extremely complex; it was conceivable that after that factor upon which the menstrual flow depended had been altered or eliminated, the ovarian cells still secreted the substance which influenced the growth of cancer cells. Consequently, the fact that the menopause had been passed did not appear to me to forbid the trial—the patient understanding that it was a trial—of so slight an operation as oöphorectomy. The results have not been encouraging. The cases selected were not, perhaps, the most favourable; No. 3, it is true, had ceased menstruating only six months, but she was very far gone at the time of operation; No. 4 was an old woman, and had hardly any ovaries left; they were extremely wasted. Nevertheless they support, so far as two cases can do so, the view that when the internal secretion of the ovary ceases to induce menstruation, it ceases also to have any influence upon cancer.

But the question of main importance is, whether the atrophy in those cases in which it is induced by oöphorectomy will be permanent? Will it be a "cure"? Obviously, nothing but time can answer the question. At present, so far as I know, only Dr. Beatson's first case has reached the stage of apparently complete disappearance of all lesions. Of my own cases, Nos. 1 and 2, the latter, notwithstanding the astonishing progress made up to a certain point, seems now (six months after operation) to have again begun a downward course. She has gone to Southend, and I can only hope that the change of air may so improve her general health that, like case No. 1, she may still make a successful stand against the disease. I should not have ventured even to express such a hope, had I not just seen the effect of change of air (apparently) upon No. 1. Another point of great importance is the frequency with which atrophy can be induced by oöphorectomy. In Dr. Beatson's three last reported cases the effect appears to have been very trifling. I have not full notes of these, but no doubt they were all operated upon before the menopause. Does this mean, as

I have supposed, that in these cases the internal secretion of the ovary had no share in the production of the cancer? That it influences the cancer process only when it has undergone a pathological variation? In my own cases (1 and 2) the local response to the oöphorectomy was very prompt. Pain ceased at once; diminution in vascularity soon followed, and in a week some evidence of atrophy was noted. But you will, doubtless, be struck by the fact that all the cancer lesions did not waste uniformly; even those situate in the same tissue did not do so. Nodules in the skin and subcutaneous tissue seem to be most quickly affected, then enlarged glands; muscle growths come far behind these. Dr. Beatson is strongly of opinion that visceral growths are not arrested by oöphorectomy, and attributes his later failures to the wide extent of the disease. No effect was produced upon the liver in No. 4, but this was after the menopause. Yet, with Gould's and Willett's cases before me, I cannot yet abandon hope for even these cases, although I feel that large involvement of a viscus probably must render recovery proportionately difficult. Acute progress will probably act similarly, but I have no clear evidence.

An early thought to occur to anyone must be that cancers, other than cancer of the breast, will be influenced similarly by oöphorectomy, for, in spite of clinical and histological differences, we have regarded cancer as essentially the same wherever it occurs. I have not myself tried oöphorectomy for cancer of any part other than the breast; but upon my advice, Mrs. Boyd performed the operation upon a woman, aged 35, with extensive cancer of the cervix and vagina and a vesico-vaginal fistula. Her general condition was good. No atrophy of the growth occurred, but the vagina became much more lax, so that she could be examined more easily. She lived six months, and might well have done so without operation. She had some severe losses, and died after a very severe one.

Dr. Beatson has recently stated that in four cases of cancer of the uterus the only result obtained was diminution of sloughing and of bleeding. I believe that the operation has been tried for cancer of still other parts, with which one would suppose the ovaries to be less closely associated, but I do not know the results. By-and-bye I hope to complete the notes of my cases. Although I cannot as yet, like Dr. Beatson, bring forward a case of apparent "cure," I do claim that in both my cases, Nos. 1 and 2, suffering has been alleviated and life prolonged. I should say that, but for the improvement which followed upon the oöphorectomy, No. 2 would now have been either in her grave or very near it. The cases I have narrated open up, as you have seen, numerous problems and a wide field for clinical work in connection with a disease so common that all have opportunities, and so distressing that all must long for some

better means of dealing with it; and it is in the hope of drawing further attention to Dr. Beatson's suggestion, and of stimulating observation, that I publish these preliminary notes.—*British Medical Journal, October* 2, 1897.

NERVOUS SYSTEM.

70.—THE TECHNIQUE OF INTRACRANIAL SURGERY.

By Louis McLane Tiffany, M.D.,

Professor of Clinical Surgery in the University of Maryland; Surgeon-in-Chief to St. Joseph's Hospital.

[The following is taken from Dr. Tiffany's paper:]

(1) *The difference between operations for Traumatic and Pathologic causes.*—In traumatic cases, operation is undertaken as a matter of necessity, suddenly, perhaps with instruments not quite suitable, but certainly without delay, the condition of the patient not permitting it. There has been no previous preparation of the patient. His general condition is unknown —by this I mean the condition of his internal organs. No preparatory treatment is possible. The elements of sepsis are often present, not only upon the surface, but perhaps thrust into the tissues by the traumatism for which the operation is undertaken, and infection may have already occurred within the head. An accurate knowledge of the condition of the kidneys may be wanting. The details in operative work, also, are often obscure, landmarks obliterated, both within and without the skull. Finally, the head is opened, in traumatic work, as circumstances permit or seem to indicate. The head may have been already opened before the case is seen by the surgeon, who is forced to do patchwork. In operations for pathologic conditions, on the other hand, the reverse of what has been said exists.

Preparation of the Patient.—It is best that the whole head should be prepared and cleaned. This applies to all cases, unless of a very minor character. In traumatic cases the head is to be shaved and the skin cleaned with green soap, hot water, nail-brush, and carefully scrubbed. The ears should be cleaned out and filled with sterile cotton. The eyes should be closed with pads of sterile cotton. The scrubbing should be done not only upon the surface, but, if a wound exist, it should be scrubbed likewise, and an effort made to get out any dirt which has been forced beneath the skin; punctured wounds should be laid open; tracks beneath the skin should be opened and scrubbed, the edges of irregularly bruised tissue may be

trimmed away and a clean surface obtained. Where coal-dust or grease has been forced beneath the surface, scrubbing with a nail-brush and soap and washing with ether and alcohol will often be sufficient to obtain a clean surface. Dirt ground into the surface or edges of broken bone can be scraped away, or nibbled away with forceps, so as to be gotten rid of. After cleansing the head for traumatic operations, a towel wrung out in corrosive sublimate solution, or sterile water, perhaps, can be used as a cover for the prepared territory until instruments and other things are ready. In preparing a patient for an operation undertaken for some pathologic condition (not traumatic, of course), I have always prepared my patient a day before the operation, and then again just prior to operating, and I see no reason to depart from this habit. An alkaline solution, bicarbonate of soda, I have found useful to remove dandruff from the scalp, but I generally use green soap. Shaving and scrubbing with green soap, or a poultice of green soap applied over the surface after shaving and left on for a couple of hours and then scrubbing afterwards, is efficacious. I remove the green soap with alcohol, and then ether, and then have the clean scalp tied up in a corrosive sublimate solution until the following day; a repetition of the cleansing as already described gives me a clean surface upon which to operate.

(2) *The best way of gaining access to the Brain.*—As the brain is to be covered in after the operation, a large osteocutaneous flap, the base turned towards the blood-vessels, is probably the most effective way of uncovering the brain. It should be cut in one piece, and then broken at the base so as to permit of turning down. This breaking at the base is much assisted by cutting across the bone with sharp forceps, or otherwise, and it should be so cared for during operation that the skin and bone are not torn asunder; it may be necessary to envelop it in a cloth wrung out in hot sterile salt solution. The cutting of the bone is to be done by the instrument with which the surgeon is most familiar—the trephine, rapidly revolving saw, chisel and mallet, all have their advocates. Jarring the head is probably the objection most frequently raised against the last-mentioned tools—the chisel and mallet. They are, however, the tools with which I am most familiar and which I prefer. Should the opening not be large enough in the skull, there should be no hesitation about cutting away the borders of the opening until sufficiently large. For this purpose rongeur forceps seem to leave little to be desired. Twice it has been my fortune to operate upon heads where, at previous operations, bone has not been replaced. It was very easy to open these heads, and the operation was done with great rapidity. It is therefore a matter to be thought over and carefully considered, whether, when it becomes necessary to operate within the head, it may

not be expedient to raise a large flap, remove the necessary bone, replace the flap, and allow it to heal. A month or two afterwards the surgeon will operate to remove the pathologic condition present, and can do so rapidly, bone not obstructing. The removal of a piece of cranium and replacement of the skin-flap is accompanied by so little danger that this plan offers advantages, especially so when the prolonged bone-cutting, which is necessitated by an intact cranium, is to be followed by a long piece of intracranial surgery. It is worth while remembering that opening the skull, even in incurable cases, may diminish pain and optic neuritis. The dura is to be divided and turned aside as a flap, the line of division being about one-third of an inch internal to the bone section, so as to permit of suturing and replacement.

(3) *Arrest of Hemorrhage.*—From the skin, hæmostatic forceps have sufficed in my hands to arrest hemorrhage. I can imagine that with a transverse bar at the top, T-shaped blade, a large area of skin would be pressed upon, and so bleeding better arrested; perhaps the T-shaped blade could be covered by rubber with advantage. By encircling the cranium with a rubber band I have not had satisfactory results. Hemorrhage from the bone during the cutting may be arrested by Horsley's putty, or pressure with dry gauze. By crushing in the edges of the bone with heavy forceps, bleeding from the diploe has always been arrested. From the dura, a curved needle, carrying a fine thread, passed around the artery and tied, has sufficed to stop bleeding. From veins, the same may be said. Where hemorrhage comes from a sinus, I have arrested bleeding in several ways—by suturing the wound in the vessel with a curved needle; passing the thread around it and tying it; by gauze pressure; these methods have been sufficient in my hands. After turning the dura back and exposing the surface of the brain, vessels are to be sought for and tied very carefully, without dragging, by two threads, and divided between. Forceps will generally tear off, and should not be employed, save very temporarily. It might be that serrefines would be of use. A growth should be encircled by ligatures under these circumstances. The material used in ligating will be at the surgeon's pleasure. I use very fine sterile silk. Finally, there is that form of hemorrhage which may come from the exposed surface after removal of a growth, and is usually denominated parenchymatous. I have found nothing so effectual in arresting this as pressure with gauze. It may be that the gauze can be taken away at the end of the operation; usually, however, it is to be left protruding and removed in two or three days. In regard to the anæsthetic: special indications for one or the other anæsthetic lacking, I have used chloroform, intracranial congestion being probably lessened thereby. A change of

anæsthetic, from ether to chloroform, I have resorted to several times while actually operating.

(4) *The recognition of the Brain area presenting.*—I have not hesitated, in intracranial work, to have at hand a cast of the brain, in order that I might compare it with the exposed area, and I see no reason to doubt that it is a good plan. Electrical stimulation of the exposed area by the methods at present in vogue gives most efficient aid to the operator. When operating for a tumour of the brain, which is covered by the cortex, the colour and consistency of the exposed area may give information, but an incision will probably be of advantage.

(5) *Removal of Intracranial Structures.* — Circumscribed growths may be taken away by spoon, finger, knife, &c., but infiltrated growths, while they may be taken away, so far as can be recognised by the operator, give most unsatisfactory ultimate results, recurrence being the rule. The dura, being removed, should be, in my opinion, replaced by gold foil, to prevent adhesions between brain and scalp, and in my hands this plan has been efficient.

(6) *Closure of the Wound and Dressings.*—Intracranial sutures of silk I have used with advantage. To obtain a bone flap where it is thought necessary, when the natural bone is wanting, different expedients have been made use of. For the skin, I use always subcutaneous sutures of silkworm gut, and I see no reason to be dissatisfied with it. A voluminous dressing of sterile absorbent gauze has done all that is necessary. I have not closed completely a head opened for an extensive operation, save in one or two instances, and here I have had occasion to regret my method. I drain by means of a piece of silver wire hooked in the lower angle of the wound, and believe that my patient's condition will be improved thereby. The time when dressings are to be changed will vary with the condition of affairs present.—*Annals of Surgery, September*, 1897.

71.—A CASE OF ABSCESS OF THE TEMPORO-SPHENOIDAL LOBE, OPENED AND DRAINED THROUGH THE OSSEOUS AUDITORY MEATUS.

By Adolph Bronner, M.D.,

Surgeon to the Bradford Eye and Ear Hospital; Laryngologist to the Bradford Infirmary.

Cases of successful operation for cerebral abscess of aural origin are fairly common, but the methods of operation are by no means perfect. The ordinary method of trephining an inch above and behind the auditory meatus is the most simple, but

the drainage and after-treatment are not at all satisfactory. The method adopted in the following case was, I believe, first suggested by Dr. Watson Browne, of Belfast, and has recently been recommended on the Continent: —

M. W., aged 28, had pain in the left ear five years ago for some weeks, and the ear has discharged more or less ever since. In November last there was severe pain for a few days, which returned about the middle of January. On February 1, the patient was suddenly taken ill in his office, and had to be carried home. When I saw him on February 4 he was semi-comatose; he complained of intense, unbearable pain in the head, and the cerebration was much impaired. The pulse was 60; temperature 104°. The optic discs were distinctly inflamed, and their edges blurred.

On February 5 we decided to operate. A large incision was made round the left auricle. The cutaneous auditory meatus was cut through and the auricle drawn downwards. The remains of the membrana tympani and the ossicles were removed. The attic and neighbouring mastoid cells were found to be diseased. With a sharp chisel I removed the upper wall of the osseous auditory meatus, and then, cutting upwards, I chiselled through the root of the zygoma and opened up the cerebral cavity. The dura mater was incised, and a Macewen's pus-searcher passed upwards and inwards for about an inch into the temporo-sphenoidal lobe. Here (the usual place) a large abscess cavity was opened, and a quantity of offensive pus escaped. The attic and neighbouring mastoid cells were then opened and scraped. The cutaneous auditory meatus was slit open so as easily to admit a finger, and its upper and posterior parts were excised, so that a large drainage tube might at some future time be introduced. An india-rubber tube was then passed through the upper wound above the ear into the abscess cavity, and the wound plugged with gauze and iodoform. The three following days a fair quantity of pus escaped. Then for three days there was no discharge of pus, and the cerebral symptoms began to return. The tube was removed, and the pus-searcher reintroduced. A large quantity of pus came away. After this the patient made an uninterrupted recovery. He left the hospital on March 22, and has since returned to business, and feels perfectly well. The wound was kept plugged from above, and allowed to heal from below by granulation. At first the drainage tube was introduced through the upper wound, but after ten days the ear was drawn up and the tube was passed through the enlarged cutaneous auditory meatus. The abscess cavity was never syringed, but insufflations of boric acid and iodoform were used daily for two months.

The advantages of this method of operating are obvious. In the first place, we get good and efficient drainage from below. The drainage tube can, if necessary, be kept in position for months without any discomfort. It can easily be removed and

replaced, and there is no danger of not again finding the abscess cavity. We can also at the same time efficiently treat and cure the attic and mastoid cells, which in these cases are nearly always affected, and thus prevent any recurrence of the disease. Only one incision and only one operation are necessary. The operation and after-treatment are more difficult and tedious than in the ordinary method of trephining, but the results are certainly more satisfactory.—*British Medical Journal, August* 21, 1897.

ALIMENTARY CANAL.

72.—THE CAUSES OF DEATH IN ABDOMINAL SURGERY AND THEIR TREATMENT.

By J. Wesley Bovée, M.D.,
Professor Clinical Gynæcology, Columbian University, &c.

[The following is from Dr. Bovée's paper:]

The causes of death from these operations may be conveniently divided into five classes, viz.:—(1) operation and complications, (2) bad condition of the patient before operation, (3) intercurrent diseases, (4) bad after-treatment, and (5) accidents. Many operations are done at a time when death seems imminent from sudden severe hemorrhage, as in ruptured ectopic pregnancy or severe gun-shot wounds of the abdomen, or from bowel obstruction or pressure from large tumours, or even from prolonged suppuration or acute sepsis. Many different injuries may demand immediate section, and these cases will necessarily increase the mortality rate of laparotomies. Many times the abdominal condition is not the only one threatening life, and in many cases the risk from anæsthesia is greater than from the presence of an abdominal tumour.

Concerning the operation, nearly everything devolves upon the operator, and the manner in which he performs the operation will usually govern the result. The principal complications of intra-peritoneal operations are shock, severe hemorrhage, and sepsis. It is usually one of these three that causes the fatal issue in the unsuccessful cases, and its work is generally not long delayed. Death from shock usually occurs some time within the first seventy-two hours. Severe primary hemorrhage may prove fatal during the operation or within a few hours afterwards, and secondary loss of blood may occur at any time during the convalescence, and be sufficiently severe to cause death. Fatal cases of secondary hemorrhage as late as from twenty to forty days after operation have been reported.

Sepsis resulting from infection during operation may prove fatal after the first day, or may be introduced into wound dressings some days later, and then hasten the patient's death.

Other conditions produce fatal results, though less frequently, and generally at a time more remote from the operation. Of these, mention might be made here of bowel adhesions producing obstruction, injuries to the various viscera, as liver causing hemorrhage not noticed at time of operation, kidney or ureter causing either hemorrhage or urinary extravasation with subsequent infection, or perforations of the intestine that through negligence or necessary haste, have been overlooked. While separating adhesions of tumours to bowel it is easy to injure that tube, and if the wall be friable, as often is its condition when attached to suppurative masses, necrosis may later produce an opening through the bowel wall, even though sutures have been employed for reinforcement. Small openings accidentally made in the omentum during operation may admit and strangulate a loop of small intestine, thus terminating life. A considerable number of autopsies have demonstrated this as the cause of death. Urinary and fæcal fistula may cause death by exhaustion. In incarcerated hernia there is great danger of exhaustion following diarrhœa that sometimes attends the liberation of the bowel. Ventral hernia in the line of incision of the abdominal wall caused death in a case not long since in the practice of a surgeon of this city, about the fifth day after operation. Shock is produced in some degree, in every surgical operation, but many causes contribute to it. Anæsthesia alone in prolonged operations may be sufficient to produce a fatal degree of shock. Hemorrhage, already mentioned, though slight, may have a like effect. Mutilation of vital organs is a frequent cause and removal of large tumours, by taking a large amount of blood from the circulation in some cases, as well as by bleeding the patient into her own veins as a result of removal of the pressure from large abdominal veins, and from heart, lungs, and other viscera, has a similar tendency.

One of the most potent causes is slowness of decision and execution on the part of the surgeon. Exposure of viscera during operation is a frequent cause of fatal shock, and this is, of course, very materially aggravated if temperature of the operating room be low. The ureters have been injured during operations followed by urinary extravasation, and discovered only at the autopsy. The peritoneum has often been badly injured and bowel adhesions occurred, often causing obstinate obstruction that was relieved by secondary operation, but more often has resulted fatally. The absorption of ptomains, following this impairment of bowel movement, often results in death. An irritable stomach may prevent the taking by the mouth of sufficient nourishment, and these cases are not the

best for bowel feeding, consequently gradually increasing exhaustion ends the drama. Some patients are panic-stricken soon after operation, and cannot well be controlled, gradually wearing themselves out. Others may be attacked with insanity in some form that may or may not terminate fatally. These conditions always render recovery doubtful. The effect of ether on the kidneys or lungs often leads to a fatal termination by producing defective respiration, pneumonia, and by urinary suppression. Chloroform, aside from its action on the heart and lungs, may also produce anuria. If the preparation of a patient for operation be neglected, we may here have furnished a fertile cause of death a few hours or days after operation. Insufficient or extreme purgation are not a part of the proper preparation of patients for operations of this kind. So also must the after-treatment not be improper. Fatal bowel adhesions may result from the long postponement of the use of purgatives, especially if severe pelvic or abdominal adhesions existed before operation. Injudicious diet has caused no small number of deaths weeks after operation.

It may be the principle of some surgeons to refuse operation to some cases that do not appear to have much chance to survive it, even though they are in a practically hopeless condition if left without surgical treatment. They, no doubt, believe they are doing more for the reputation of surgery in pursuing this course. While not agreeing with men of that opinion, I am not prepared to say I am right and they are wrong. Certainly, their mortality rate should be much better than that of the operator who will do for any living person all his skill and experience will permit. As many times death has resulted from insufficient knowledge of the real condition of the patient at the time of the operation, it follows that to be very familiar with the physical condition of a patient before operation is an essential feature of abdominal surgery. The principal organs of the body should be studied, both as to their function and organic condition. In the vast majority of cases, the operator has an abundance of time for careful study before operation. The detection of the localised tumour or other abnormality is not sufficient, but careful exploration should be made of all the principal organs of the body. The condition of the kidneys, heart, lungs, liver, and gastro-intestinal canal are particularly important, and, when possible, the function of these organs and their accessory structures should be normal, or nearly so, before an operation is performed. This will assist in the after-treatment, as well as lessen the susceptibility to shock. A healthy, vigorous organ or system of the body is less easily influenced by shock, ptomain absorption, &c., than is one that is sluggish, incompetent, or impaired. Urinalysis is a

very important matter in this work. We have learned that an examination of the urine that tells of the presence or absence of albumen, the specific gravity, and reaction of a specimen voided by the patient, is of no earthly consequence. We must know the amount of solids passed by the kidneys in twenty-four hours, the presence or absence of renal casts, and whether any abnormal ingredients are present. The urine must be drawn by catheter to prevent its being contaminated by extraneous matters, and we must know how much these points are modified by insignificant conditions.

We should always know when to stop, and not to place upon the patient a greater load of shock and other handicaps than she can stand and recover under. Preparations should be made in every instance for rapid and proper operation. Many deaths are directly due to the anæsthetic, and therefore we should carefully study the action of the anæsthetic upon the patient. The most intelligent and best informed assistant should be the one to give the anæsthetic. The author has found the admixture of oxygen with chloroform to be very satisfactory. The amount of time consumed in giving the anæsthetic is important, and, of course, the rapidity of the operator will to a great extent control this. Careful and clean surgery should always be done, but no time should be used during an operation for study. In cases in which we have reason to expect much shock, it is very important to do everything to prevent it. The heating of the operating table by hot applications in the way of hot water pipes or hot water bags is of untold value. The temperature of the room should be about 85 degrees F., and every assistant well trained to the work. In this way only is rapid work possible. Some of the principal points to be remembered by the surgeon are to do as much of the work as possible by sight, to expose no viscera not to be removed, either to contamination with discharges in the field of operation or to the outside air. Drainage is ofttimes necessary, and probably if more drainage was practised more permanent cures would be secured. Close all perintoneal tears if possible, and thus remove danger of intestinal adhesions; endeavour to leave no bleeding surface. It is not necessary to wait until the patient has been removed from the operating table to begin the use of stimulants. Very frequently a liter or less of normal salt solution run under the breast of a woman during operation will turn the course of her condition toward recovery. I have seen bad cases recover in which artificial respiration was necessary throughout nearly the whole operation. If intestinal tears be made during operation, they should be isolated completely, that the peritoneal cavity will not be infected, and repaired as soon as possible. If the bowels are kept moving by cathartics, adhesions are not so apt to occur. Over-feeding and under-feeding are

bad for these cases, though the latter is the less harmful. We must not feel that our patients are out of danger when the bowels have been moved once, for many cases of bowel obstruction have been noticed as late as the second or third week, when all seemed serene, and rapidly proved fatal. Fæcal fistula following operation is, to say the least, a very disagreeable complication at all times, and if large and connected with the small intestine, will perhaps kill the patient.

Ureteral and kidney fistulæ may cause death by infection of these organs. Those connecting with the bladder will usually close spontaneously if that viscus be properly drained. Sepsis is a very difficult condition to contend with. Many of the operations are for this cause, and a good many die from it that were infected during or following operations for other causes. As bacteriology is making such praiseworthy progress in sero-therapy, we can with reason hope for the successful treatment of this condition in some such manner as is being applied to puerperal sepsis. But at present we are almost powerless against it. Fortunately, we have it to contend with far less often than formerly. We must not allow this opportunity to pass for saying a good word for the infusion of normal salt solution in these cases of sepsis. We need say nothing more concerning accidents, except that good judgment is required, and that in ligating blood vessels in the abdominal cavity, it is advisable to include in ligatures as little of the tissues about vessels as possible, thus preventing the tendency to secondary hemorrhage.—*Journal of the American Medical Association, June* 19, 1897.

73.—SOME PRINCIPLES OF THE TREATMENT OF WOUNDS OF THE ABDOMEN.

By Professor Madelung, Strassburg.

Every solution of continuity, greater than a needle-puncture, of the organs within the peritoneal cavity, stomach, intestine, biliary and urinary channels can give rise to extravasation of their contents into the abdominal cavity. Escape of the intestinal contents into the abdomen results nearly always in a peritoneal inflammation, speedily resulting in death in the great majority of cases. Normal urine, free from bacteria, and normal bile may be present in the peritoneal cavity in considerable amounts, and for quite a long period of time without harmful effects, but in practice we have no means of recognising that urine or bile is in an aseptic condition or how long they may so remain. The conditions for spontaneous cessation of hemorrhage are particularly unfavourable within the peritoneal cavity. The only certain method of closing

wounds of the intestine and of the biliary and urinary tract, and of controlling hemorrhage, is by the use of sutures or ligatures. It is almost impossible to prevent the fatal outcome of a general peritonitis. Our opinion and treatment must always be influenced by the nature of the force producing the injury. Wounds inflicted by sharp weapons, pointed stakes, and fire-arms, give rise to other indications than do contused wounds, and likewise subcutaneous lesions differ from open wounds. To-day the length of time between the receipt of injury and the beginning of treatment is of much greater importance than formerly.

Supposing that we have to deal with a wound of a few hours' duration, situated at any point of the abdominal wall that may communicate with the interior of the belly, what shall be our line of conduct? It is absolutely necessary immediately and certainly to ascertain whether we are dealing with a penetrating or non-penetrating wound. Excepting wounds with a prolapse of the viscera, or an appearance of fæces, bile, or urine, knowledge of the above conditions cannot be obtained without operative interference. Probing or exploring with the finger is often impossible or insufficient: both are dangerous if done without sufficient antiseptic precautions. Laying the wound freely open is of assistance only in a certain proportion of cases. Such a course will be found impossible in wounds of the chest leading into the abdominal cavity, of the back in the obese, of the buttocks and perineum, and under numerous conditions will take too much time or not fulfil the indications. An abdominal section will then be found necessary. Whenever possible, the patient should be removed to an hospital where all the necessary equipment and assistance are obtainable. The wound should be left entirely undisturbed, even if there is a prolapse of the viscera; a heavy protective dressing should be applied. The administration of opiates is of doubtful value. When the checking of hemorrhage is urgently indicated, a laparotomy may be hastily performed, and sponges and compresses packed around the site of bleeding, and a compressive dressing applied without closure of the abdominal wound. Generally speaking, transportation to a proper institution is indicated, provided that relief can thereby be obtained within twenty-four hours after receipt of the injury.

Whether the abdomen shall be opened in the axis of the wound, or in the median line, or at some other point, is generally not important. Evisceration and the "piecemeal" exploration of the intestine are to be avoided. A study of the conditions attending the infliction of the wound will give valuable data as to the location of the injury. Senn's hydrogen-gas test is rejected as dangerous and uncertain. Extravasation of visceral contents is to be removed by mopping

and not by irrigation. Prolonged search for projectiles is unwise. An expectant attitude may be maintained in such cases as come under observation twenty-four hours after injury, when no viscera are prolapsed, no symptoms of peritonitis present, and the general condition, especially as reflected by the pulse, is good. Contusions of the abdomen are to be treated on the expectant plan, as single symptoms, even if of an important character, are unreliable, provided always that a careful observation and consideration of the general condition and the local signs authorise such an attitude. The patient should be carefully watched for some weeks lest a later perforation of the gut follow from injury to the intestinal walls. (*Beiträge zur klinischen Chirurgie*, Band xvii., Heft 3.)—*Abstract from Annals of Surgery, September*, 1897.

74.—RUPTURES OF THE VISCERA AND THEIR CONNECTION WITH SURGICAL SHOCK.

By Edwin Welles Dwight, M.D.,
Surgeon to Out-patients, Boston City Hospital, &c.

[The following is taken from Dr. Dwight's paper:]

After accidents of a certain degree of severity, the following group of symptoms is usually found; and when there is no external or known condition to account for them, they are taken together and called "shock." These symptoms are lowered temperature, rapid pulse, sighing respiration, restlessness, and cold, moist skin; and it is to this group of symptoms rather than to any lesion that the term "shock" is applied. The same symptoms are found with hemorrhage, and it is only when the question of hemorrhage has been eliminated that this term is used. Shock only in its most severe forms is apt to be seriously considered as an obstacle to the radical treatment of the more definite lesion for which treatment is requested. While there are cases in which even the autopsy fails, as yet, to demonstrate the actual lesion which caused death, they are very rare; and there can be little doubt that in the future, with increased accuracy in diagnosis, the word "shock" will be superseded by diagnoses more in accord with scientific accuracy, and which will give some idea of the lesions underlying this group of symptoms. It is especially true after severe accidents that the autopsy almost invariably develops some condition which is sufficient in itself to account for the death, and that after an autopsy it is rarely, if ever, necessary to use vague terms to account for it.

Injuries to the abdomen in which no exact diagnosis is made clinically are of very common occurrence in our hospital wards; they occur after a great variety of accidents, but most commonly from assaults or falls of various kinds. The amount of "shock" present after accidents depends upon two factors, the character of the violence, and the resistance of the individual; being most marked after those injuries which are most apt to result in ruptures of the viscera, and in those persons whose resistance, through age or disease, is lowered.

Ruptures of single organs without involvement of others appear rather rarely at the autopsy; and when but one organ is involved and death ensues rapidly, the only cases that I have been able to discover in which there had not been hemorrhage enough to account for the death, or in which peritonitis or pneumonia was not the active agent, have been those of ruptures of the heart and aorta. The time elapsing between the accident and death varies from a few minutes to several days; and in a few instances life may be prolonged for weeks, the duration of life being, almost without exception, in inverse proportion to the amount of blood which was lost. The amount of injury to the various organs varies greatly, as does the amount of hemorrhage; and we find all degrees from a slight contusion to complete rupture or maceration, as we do from small ecchymoses to the extravasation of several pints of blood. As the injury and the amount of hemorrhage vary so widely, and as the duration of life in those cases which come to autopsy depends upon these factors, it is evident that the symptoms in cases of less severity, depending as they do upon the same conditions, must be at least as variable. The diagnosis of these conditions during life is further hindered by the fact, which has long been recognised by medical jurists, that ruptures of the viscera are the common results of accidents which leave no external sign. Not only are external bruises absent in many, if not in the majority of these cases, but other symptoms which might be expected to be present in injuries of the various organs are frequently absent, even where life is prolonged for days or weeks. If this be the case with severe forms, how much more likely they are to be absent in the lighter forms of injury.

Ruptures may take place in any part of any organ; and while death may occur almost instantly in some, in others life may be prolonged, and death result from entirely secondary causes, as peritonitis, pneumonia, or secondary hemorrhage; and in still others the laceration may entirely heal and perfect recovery take place. Opinion as to the relative frequency of rupture of the various viscera varies much with different observers.

Rupture of the liver.—While in the majority of cases of deep lacerations of the liver death follows after a short interval, in

some it is postponed for several days; and it is probable that in a few, even after rather deep and severe wounds, recovery takes place. Erichsen says that he has "seen several cases of recovery after injuries probably occasioning lacerations of the liver and followed by peritonitis and jaundice." Death from ruptured liver is almost invariably due to hemorrhage, usually primary, but at times secondary. Erichsen reports a case of death from peritonitis following rupture of the liver. There are a number of cases on record of death from intercurrent disease, at the autopsy of which it was found that the hemorrhage had ceased, and in some that the liver wound was in process of healing. Ruptures of the liver without involvement of the peritoneal covering are not uncommon; in these the amount of hemorrhage is comparatively small, and, while the destruction of tissue may be great, the prognosis should not be very serious. Ruptures may occur in the liver in any part of the lobe; they may be single or multiple; they may involve the deep tissues without rupture of the capsule; or they may be simple slits in the capsule. They may, as in a case reported by Draper, completely divide the liver in two, leaving nothing but a "finger's breadth of liver substance and peritoneum as a hinge posteriorly"; or, as by Caspar, one where it was "completely ruptured transversely, so that the anterior portion lay loose in the abdominal cavity"; and another, in which "the entire edge of the right lobe seemed as if it had been gnawed by animals." In the most severe of these cases death occurs within two hours, and the autopsy shows an amount of blood in the abdominal cavity which readily accounts for the rapidly fatal course. Minor injuries to the liver are often found, combined with other conditions of a more serious character.

Rupture of the kidneys.—While in the opinion of many pathologists rupture of the kidney is of rare occurrence, the diagnosis of rupture of the kidney is made more often clinically than that of any other organ. This is probably due to the fact that not only is increase in size in or about the organ more easily demonstrated than of the liver or spleen, but that by means of the urinary passages hemorrhage is more apt to show itself. That ruptures of the kidney occur not infrequently is the experience of every surgeon who has much to do with traumatic surgery; and that a rather large proportion of them recover under rest and ordinary care I think would be allowed. Reports of those cases which come to autopsy and operation, would lead one to feel that they were even more common than we are apt to suppose. There certainly are many cases which appear in the hospital wards after accidents, which might well result in severe injuries to the kidneys, which present most of the symptoms of such a rupture, and which in their subsequent

history during convalescence simulate very closely cases of rupture, but which are classed as injuries or contusions of the abdomen on account of the absence of hæmaturia. Ruptures may take place in any part of the kidney, may be one or many, and of all grades of severity; the symptoms which present themselves must vary greatly with their location and importance. Unless there is great laceration of the tissues, the peritoneum is not involved; peritonitis rarely follows, but lumbar abscess is not infrequent.

Rupture of the spleen.—The spleen is said by most authors to be one of the most frequently injured of the abdominal organs, and from its position and consistency one would expect this to be the case. In the cases which I am able to report it is much rarer than some of the others. When the spleen is enlarged from any cause it is much more liable to rupture than when of normal size. As in the other organs, ruptures may occur in the spleen in any part; they are usually transverse, but not uncommonly are more in the nature of a crush. Death after rupture of the spleen occurs at about the same intervals and under the same conditions as after rupture of the liver. One of the most common secondary causes is said to be subdiaphragmatic abscess; and Pollock reports a case of death from subdiaphragmatic abscess and empyema following rupture of the spleen and diaphragm, the result of accident eleven weeks before death.

Rupture of the pancreas.—On account of its deeply seated position, it would be natural to suppose that the pancreas would be little liable to injury from external violence. Its position does not entirely protect it. Such injuries are not necessarily fatal.—*Boston Medical and Surgical Journal, August* 29, 1897.

75.—A PLEA FOR THE EARLIER PERFORMANCE OF GASTROSTOMY.

By A. W. Mayo Robson, F.R.C.S.,
Senior Surgeon to the General Infirmary at Leeds; Professor of Surgery in the Yorkshire College of the Victoria University.

[The following is taken from Mr. Mayo Robson's paper. The illustrations and some other parts have been omitted:]

The operation of gastrostomy is ordinarily looked on as such a formidable procedure that, even where it is strongly indicated, the general medical attendant usually views it with so much disfavour as to lead him to discountenance its performance, and to trust to sustaining existence in irremediable dysphagia by nutrient enemata. Death by starvation, under such

circumstances, is, however, one of the most terrible experiences both to the patient and his friends, and the reason of this paper is to raise the question whether the views originally held are not erroneous, and whether surgery does not hold out much better prospects to this unfortunate class of cases.

Why has the operation of gastrostomy acquired this ill-repute? In the first place, because it was, and even yet as a rule is, customary to defer it until the sufferer is so reduced by starvation and so enfeebled as to be unable to withstand the shock of any operative procedure. Even if he does not die of shock, his healing powers are so impaired as to lead to failure in union and then to death from wound complications; or his assimilative powers are so impoverished that, even if the operation be immediately successful, death ensues from exhaustion. In the second place, when a direct opening is made into the stomach, the fistula, in many cases, speedily enlarges and becomes patulous, leading to leakage of food and of irritating gastric secretion, so that the abdomen tends to become excoriated, and the prolongation of life is attended with considerable discomfort. Do these conditions still apply? I think I shall be able to show that if the operation be performed sufficiently early, and if it be done according to the method I am about to describe, it will be found that gastrostomy may be included among the most useful and beneficent of the operations the surgeon is called upon to perform. When abdominal section was attended with a high rate of mortality, it was only natural that, if there was the smallest element of doubt as to the nature of the disease causing the dysphagia, delay should occur in advising operation; but if it can be shown that early operation has no mortality or only a slight rate due to accidental or unforeseen complications, it may be justifiable to perform the preliminary or even the complete operation, knowing that the small opening will close voluntarily if the cause of the dysphagia should disappear or be cured by treatment.

The operation I am accustomed to perform is very simple, and only occupies a few minutes; it is a modification of the Ssabanejews-Franks method, but differs in several details. A vertical incision of about an inch and a half is made over the outer third of the left rectus abdominis, commencing three quarters of an inch below the costal margin; the fibres of the rectus are separated, but not divided, to the extent of the incision, and the posterior part of the rectus sheath and peritoneum are divided together, the opening being an inch in length. A portion of the cardiac end of the stomach is then brought up through the wound, and held forward by an assistant until four sutures are inserted into the base of the cone by means of a curved intestinal needle, thus fixing the

visceral peritoneum of the stomach to the edges of the parietal peritoneum. A transverse incision of half an inch is then made through the skin, one inch above the upper end of the first cut, and by means of a blunt instrument, such as the handle of a scalpel, a director, or forceps, the subcutaneous tissue is undermined so as to connect the two openings beneath a bridge of skin and subcutaneous tissue. A closed pair of pressure forceps being introduced through the upper incision, as far as the projecting part of the stomach, grasps the most prominent part and draws it up to and beyond the surface of the second opening, where it is retained by means of two hare-lip pins. It should just fill the opening, and should require no sutures. The lower opening is now closed by two silkworm-gut sutures, or by a continuous subcutaneous stitch, and the edges are dried and covered with a little collodion and gauze. If needful, the stomach can be opened at once by a tenotomy knife introduced between the pins, but, if possible, the opening should be deferred for twenty-four hours, when a barrier of lymph will have been thrown out. After opening, a No. 8 soft catheter is inserted, to which a piece of tubing is fixed, and by means of a funnel the patient can at once be fed with warm milk and egg, or whatever liquid may be thought desirable. The catheter may be left in position for a few days, after which I find that it is easy to insert it whenever a meal is required.

If the patient is much exhausted, an anæsthetic may be dispensed with and cocaine employed, as the only pain is caused by the skin incision. I have performed this operation on many occasions, and with most satisfactory results. Little or no shock is experienced, as, although the peritoneum is opened, there is neither exposure of viscera nor handling of any organ except the portion of stomach to be fixed, and I have never known peritonitis to follow. Where the operation is not deferred until "too late," death should not occur except from some accidental complication.

Even after gastrostomy for malignant stricture of the œsophagus, I have seen as much as a stone and a half to be gained in weight. In one case, in which I performed gastrostomy nearly three years ago for what I supposed to be a malignant stricture, the patient gained his health and weight completely, and some time afterwards he regained the power of swallowing a little fluid, not sufficient, however, to support life, and he still makes use of his gastrostomy opening for feeding purposes. In advocating, therefore, the earlier and more frequent performance of the operation of gastrostomy in cases of dysphagia incapable of relief by ordinary means, I feel that I can do so as the result of ample experience of its beneficial results.—*The Practitioner, September,* 1897.

76.—THE TREATMENT OF GANGRENOUS HERNIA BY RESECTION AND IMMEDIATE UNION OF THE INTESTINE, WITH AN ACCOUNT OF TWO CASES.

By H. J. Waring, M.S., B.Sc., F.R.C.S.,
Surgeon, Metropolitan Hospital, &c.

[The details of the cases have been omitted. Case 1 recovered, and Case 2 died fourteen days after the operation.]

Patients suffering from strangulated femoral hernia, in which the intestine has become gangrenous, present many obstacles to satisfactory surgical treatment. Often the physical condition of the patient is such that it is unwise to perform a prolonged surgical operation, such as may be necessary in the treatment of a case of this kind, involving resection of the dead portion of bowel, and the establishment of an intestinal anastomosis between the divided ends. The length of time occupied in the establishment of an anastomosis, after the diseased intestine has been removed, may be considerably shortened by the use of one or other of the many mechanical appliances which have, during recent years, been introduced as a means of, or an aid in, making a junction between the ends of the divided intestine as quickly and securely as possible. Two cases of this kind, in which Murphy's "anastomosis button" was used for joining the divided ends of the intestine, are of interest. In the first case, Murphy's "button" alone was made use of; and in the second, after the "button" had been fixed, a row of Lembert's sutures was inserted around the margin of the button, so as to more securely approximate the divided ends. The "anastomosis button" in the latter acted as a form of internal splint, which facilitated the insertion of the series of Lembert's sutures.

During the past few years many papers have been published in which the best method of treatment for gangrenous hernia has been discussed. According to Kendal Franks, who has collected the statistics of 222 cases in which resection and immediate suture had been practised, the mortality was 47 per cent. The same observer also showed that the mortality in those cases which had been treated by the formation of an artificial anus was 80·7 per cent. Lockwood, in 1894, recorded a case of gangrenous hernia, which he treated successfully by resection and immediate suture. Zeidler has collected the records of 289 cases of gangrenous hernia, which had been treated by resection and immediate suture; of these, 142, or 49·13 per cent., died; and also of 287 cases which were treated by the formation of artificial anus, of which 213, or 74·22 per cent., died. After excluding a number of doubtful cases (twenty from the first group and seventy-four from the second), this author concludes that 17 per cent. more patients die when cases

of gangrenous hernia are treated by the formation of an artificial anus than when they are treated by resection of the gut and immediate suture. Bogdanik has also recorded a successful case, in which the ends of the intestine were joined by Czerny-Lembert sutures after the gangrenous portion had been excised. These statistics leave no doubt that much better results are obtainable by the practice of resection and immediate suture than by the formation of an artificial anus.

Murphy (of Chicago) in 1895 published an account of twelve cases of gangrenous hernia (collected from surgical literature), which had been treated by resection of the gangrenous portion and union of the divided ends of the intestine by means of his "anastomosis button." Of these, eleven recovered, and one died. A consideration of these cases led me to adopt the use of the button in the two cases mentioned above. Murphy recommends that a V-shaped portion of the mesentery should be removed in addition to the gangrenous portion of gut. It appears to me, however, that when the mesentery is in a healthy condition, that it is better to divide it just beyond the line of intestinal attachment, than to remove a quantity of healthy tissue. If a V-shaped piece is taken away, a number of blood-vessels are necessarily divided, and some of these help in the blood supply of the approximated ends of the divided intestine. On this account I adopted Kocher's recommendation, and divided the mesentery just beyond the dead portion of intestine. An objection to the use of an "anastomosis button" appears to me to be the small size of the lumen. If a patient has swallowed a hard indigestible substance with his food, such as a cherry stone or orange pip, previous to the occurrence of the strangulation, and such substance has not passed below the herniated portion of the gut, it will very probably become impacted in the button, and give rise to an acute attack of intestinal obstruction. I have had an experience somewhat of this nature. In order to obviate this difficulty, the lumen of the button might be made larger, or some form of bone tube might be used instead. The advantage of the latter is that it is not necessary that it should become detached and passed along the intestine to be voided, but that, if properly prepared, it is dissolved by the digestive juices a short time after it has been inserted. This, however, does not take place until the lumen of the gut has been cut off from communication with the line of sutures and the peritoneal cavity, by plastic inflammation. A bone tube of this kind acts as an internal splint to the walls of the intestine, and facilitates the union of the approximated ends in the position which they have been fixed by the sutures. The theory of the action of a bone tube is similar to that of a "button," provided sutures are used with the latter. It does not appear to me to be sufficient to trust

to the approximation which is brought about by the "button" alone, since it not uncommonly happens that the walls of the divided intestine have been distended owing to the obstruction, and they do not return to their normal healthy condition until some days after the anastomosis has been established. If this is the case, and the walls are thin, the button will cut through before sufficient plastic inflammation has taken place.

The use of some mechanical appliance, such as a bone tube or an "anastomosis button," aids very much in the rapidity and the accuracy with which the sutures can be inserted. It also helps to maintain the parts in exact apposition during the early stages, after the resection of the intestine has been performed. On these grounds, I should advise the use of a mechanical appliance in the treatment of cases of gangrenous hernia. Of the various kinds which have been recommended, I think that a bone tube will prove the best. It should be made of decalcified bone, and should be kept in absolute alcohol after it has been prepared and until it is required for use. Immediately before the operation, it is taken out of the spirit and placed in a warm sterile solution. The tube should be so constructed that it allows a large lumen for the contents of the alimentary canal to pass along. The best tube for this purpose is of the shape recommended by Mr. Bailey.

Statistics relating to a sufficient number of cases of gangrenous hernia, which have been treated by resection and immediate union with a mechanical appliance, do not exist. The most extensive are those in which an "anastomosis button" has been used. Greig Smith says that out of twenty-six cases treated by this method only three terminated fatally. He thinks that for all cases by all methods the death rate is about one in three. If this result can be achieved, it will demonstrate that surgery has much advanced in the treatment of these cases during recent years. Which method, however, of treating the intestine after the gangrenous portion has been removed, remains yet to be proved. It seems probable that the use of a mechanical appliance, which will enable the surgeon to complete the suturing in a very short time, and will not be a cause of danger afterwards, will prove to be the best. The form of appliance will, I think, be a tube made of some substance which will be dissolved by the intestinal juices a few days after its insertion. At the present time we have nothing better for this purpose than a tube of decalcified bone. Much care, however, is required to keep these in a reliable condition for use. Alcohol appears to be the most reliable substance to preserve them in.—*Edinburgh Medical Journal, September*, 1897.

77.—THE SURGICAL TREATMENT OF INTUSSUSCEPTION IN INFANTS.

By Bernard Pitts, M.C., F.R.C.S.,
Surgeon to and Lecturer on Surgery at St. Thomas's Hospital, London.

Pitts (*The Lancet*, June 12, 1897) has reported seven cases of intussusception of the bowel in children between the ages of ten weeks and two years and a half, of which two were of long standing and the remainder of recent occurrence, and all of which were treated by abdominal section, with recovery in six and death in one of the acute cases. Upon the basis of this, together with earlier experience, it is recommended that, in cases of recent acute intussusception, distension of the bowel by air or water, in conjunction with gentle external manipulation, may be tried under an anæsthetic. The surgeon should, however, be present, and be prepared to open the abdomen at once if a satisfactory result is not quickly obtained. In many cases, the effect of such inflation is to reduce the main mass of the tumour, but to leave an irreducible portion in the right iliac and lumbar regions. This amount of success aids the subsequent operation, and allows the tumour to be delivered easily through a smaller incision and with less manipulation. If inflation has apparently been successful, the child should be carefully watched, and with evidence of continued trouble abdominal section should be resorted to and further inflation tried. An explanatory operation should be undertaken without preliminary inflation when, from the severity of the symptoms or the chronicity of the case, there is reason to believe that such inflation would be dangerous or unlikely to succeed. The time required for insufflation adds considerably to the shock. The median incision is suitable in the majority of cases, but when the tumour is in the cæcal region a limited incision in the right semilunar line may be found most convenient. For the reduction of the final portion of an intussusception the tumour should be brought outside the wound, so that the operator may clearly see the condition of the bowel, and make sure that the reduction is complete. Thickening about the ileo-cæcal valve may be easily mistaken for an incomplete reduction. When doubt exists, an incision may be safely made into the colon, and the parts examined from within the bowel. An incomplete reduction will certainly lead to further trouble. In some of the cases of spontaneous cure, or cure by inflation or manipulation, it is highly probable that complete reduction is not effected, and the chances of recurring symptoms are therefore greater than after careful operation. In none of the seven cases reported did it seem desirable after reduction to attempt any

fixation of the bowel—such as by suture of the mesentery—as a security against recurrence. Such a procedure seemed contraindicated, as it would have added to the length of the operation and have been uncertain as to the effect produced. All of the children were given small doses of tincture of opium, and kept under constant medical supervision for a considerable time after convalescence from the immediate condition. When reduction is found impossible, a resection inside the colon would seem to afford the best chance. The junction between the large and small bowel must be made secure before any part is cut away. When gangrene is present, the condition in young children is almost hopeless. Complete section and end-to-end union, whether by Murphy's button or by suture, has so far been practically without success. Perhaps rapid resection, with lateral implantation of the small bowel into a healthy portion of the colon, and bringing the cut edge of the large bowel to the surface, as a temporary vent for the escape of flatus, would be the quickest and safest method to adopt. Safely, however, as infants withstand a short operation, a prolonged one under such circumstances seems almost beyond their power.—*Medical Record, October* 9, 1897.

78.—TREATMENT OF SEPTIC PERITONITIS.

By Prof. Senn, M.D., Ph.D., LL.D.,
Chicago.

[The following is taken from an abstract of a paper read before the Twelfth International Congress, August, 1897 :]

There can be no difference of opinion in reference to the advisability of early operative treatment in the management of general diffuse septic peritonitis. Without operation death is certain. An early operation may succeed in arresting further extension of infection in cases in which the disease would become diffuse, and in diffuse cases may occasionally be the means of saving a life which without it would be surely lost. An early diagnosis and prompt operative interference are the conditions *sine quâ non* of success. The patient should be properly prepared for the operation, not only with a view of securing absolute asepsis for the field of operation and everything that is to be brought in contact with the wound, but the necessary precautions should also be carried into effect to sustain the heart's action and stimulate the capillary circulation during and immediately after the operation. I am partial to the use of sulphuric ether as an anæsthetic in performing laparotomy for this indication, as it has a less injurious effect upon the already enfeebled circulation than chloroform. The body must be carefully protected against loss

of heat by warm flannel blankets and by bottles or rubber bags containing hot water. The solutions which are to be used for irrigation must be kept at a temperature of about 110° to 120° F.

The treatment of peritonitis by laparotomy received a new impulse when, about nine years ago, it was found that the disease is so often produced by primary suppurative and perforative lesions of the appendix vermiformis.

Incision.—Authorities are as yet not agreed as to the size, location, and number of incisions. In circumscribed peritonitis the rule is usually followed to open and drain by the shortest and most direct route. In perforation of any organ other than the appendix vermiformis, resulting in diffuse peritonitis, the first incision should always be made at or near the median line. The incision is made above the umbilicus if the gall bladder, stomach, or duodenum is the seat of perforation, below the umbilicus in perforation of any other portion of the small intestines. In the treatment of diffuse septic peritonitis, the incision should be at least large enough to insert the hand for the purpose of making a careful intra-abdominal exploration. Mr. Bowlby is of the belief that an incision below the umbilicus does not necessarily empty the peritoneal cavity. In cases of peritonitis resulting from perforation of a gastric or duodenal ulcer, he advises two incisions (one above and one below the umbilicus) to insure complete flushing. In diffuse peritonitis incisions should be made at a number of points with a view to facilitate irrigations and insure free drainage. The best points will be above the pubes, above the umbilicus, and posteriorly through the lumbar region on each side. In women, free drainage into the vagina by incising Douglas's cul-de-sac will answer an excellent purpose.

Eventration.—A number of surgeons favour eventration. after incising the peritoneal cavity freely, in order to obtain more thorough disinfection. In septic peritonitis the serous coat of the intestines is always damaged, and frequently the muscular coat is paretic. These conditions render them liable to be injured and even ruptured when extensive eventration is made, to say nothing of the shock which always attends such a procedure. I have seen the dangers of extensive eventration many a time in the operative treatment of intestinal obstruction, and, wherever possible, I am only too anxious to reach without it the object for which operation is performed.

Irrigation.—Some surgeons invariably irrigate ; others believe that irrigation does more harm than good, and are content to remove the inflammatory products by means of sponges. It is generally conceded that in diffuse peritonitis it is impossible, by any known methods of irrigation, to remove all of the infectious material from the peritoneal cavity, yet the surgeon

resorts to irrigation almost instinctively to diminish the danger from this source. The use of strong antiseptic solutions has been abandoned, and sterilised water, decinormal salt solution, solutions of boric acid, or acetate of aluminium, and Thiersch's solution are now most frequently used. Whatever solution is employed, it should be used at a temperature of 110° to 115° F., and the stream should be sufficiently large and strong to wash out the most remote corners of the peritoneal cavity in the direction of the drainage opening or openings. The propriety of tearing up adhesions for the purpose of making the irrigation more thorough is very questionable, and as a rule should be avoided. The so-called toilette by using sponges must be done with the utmost gentleness, if resorted to at all, as all mechanical results inflicted upon the endothelial surface are sure to aggravate the existing conditions. If it is intended to remove the fluid from the peritoneal cavity, it is better to do so by placing the patient on the side so as to pour it out instead of removing it by mopping.

Incision of Overdistended Intestine.—One of the most unfavourable conditions in peritonitis is over-distension of the intestines with gas and septic fluid material. A paretic inflamed intestine is permeable to pathogenic microbes, thus adding another fruitful source of infection to the existing septic inflammation. I have made visceral incisions in a number of cases in which the intestine had become paretic, and although but one of the patients recovered, I am firmly convinced that it is almost essential to success in such desperate cases.

Drainage.—Drainage of the abdominal cavity after operations for peritonitis is an admission of the present imperfect stage of surgery; it is an acknowledgment on the part of the surgeon that he has only in part fulfilled the indications for which the operation was performed; it is a confession that he was not able to accomplish what was so much needed and what he so earnestly desired—complete asepsis of the entire peritoneal cavity.

Intra-Intestinal Saline Injections.—The value of saline cathartics in the treatment of incipient peritonitis not caused by perforation is now generally recognised. One of the difficulties encountered in the treatment of such cases is the intolerance of the stomach to food and medicines. A. J. McCosh has succeeded in securing free catharsis and in overcoming the intestinal paresis after operations for peritonitis by injecting into the small intestine, at a point in the jejunum or in the ileum, as high up as possible, a saturated solution containing between one and two ounces of sulphate of magnesium.

After-Treatment.—In all cases the most attentive and careful after-treatment is essential to success. The patients are

prostrated by the disease and the operation, and require a stimulating treatment. External dry heat is an important element in counteracting the shock and in restoring the peripheral circulation. The thirst is quenched most effectually by a subcutaneous infusion or by rectal enemata of water. Strychnine and alcoholic stimulants are best calculated to increase the force of the heart's action and the tone of the arterial circulation. Partial inversion of the body by raising the foot of the bed and also autotransfusion are potent means of inducing cardiac stimulation. A well-fitting abdominal bandage applied firmly exerts a favourable influence in preventing and diminishing abdominal distension. Saline cathartics should be administered as soon as the stomach is in a condition to absorb them. Meteorism can often be relieved by high turpentine enemata and the use of the elastic rectal tube. As no operation ever secures completely aseptic condition of the peritoneal cavity in cases of general peritonitis, Marmorek's streptococcus antitoxin may prove a useful adjunct to the after-treatment. A number of cases have recently been reported in which the serum appears to have been of great value in the treatment of septic conditions in the peritoneal cavity and elsewhere. It is not probable that it will ever displace the knife in the treatment of diffuse general septic peritonitis, but it is more than probable that it will prove to be an important therapeutic agent in the treatment of peritonitis before and after operation. Opium should be used with great caution. The external dressing should be changed as soon as it has become saturated. If continuous irrigation is decided upon, a decinormal salt solution at a temperature of 195° F. is the one usually employed. The current should be small and without much force. The outflow from the peritoneal cavity should be received upon a rubber blanket, and conducted into a receptacle near the bed. This method of irrigation recommends itself particularly in cases of diffuse septic peritonitis. In suppurative diffuse peritonitis, periodical flushings, at intervals of two or three hours, will prove of value in removing from the peritoneal cavity the fluid products of the inflammatory process. The solutions best adapted for this purpose are a saturated solution of the acetate of aluminium, a 3 to 5 per cent. solution of boric acid, or Thiersch's solution. Drainage, when once established, should be suspended gradually, and not suddenly. As soon as the peritoneal cavity and the drain canals are aseptic, the external wound should be sutured, to prevent, as far as possible, the subsequent formation of a ventral hernia.—*Medical Press and Circular, September* 29, 1897.

79.—MESENTERIC CYSTS.

By Berkeley G. A. Moynihan, M.S. Lond., F.R.C.S. Eng.,
Assistant Surgeon, Leeds General Infirmary, &c.

[Much of Mr. Moynihan's interesting paper, including details of cases and illustrations, have had to be omitted here.]

Cysts of the mesentery are among the surgical rarities. Isolated cases, numbering altogether about one hundred, are to be found in surgical literature. The following contains all the various forms of cysts which have been described as existing in the mesentery:—(1) Serous cysts; (2) chyle cysts; (3) hydatid cysts; (4) blood cysts; (5) dermoid cysts; (6) cystic malignant disease—cystic sarcoma. From this classification I exclude all cases of cyst arising elsewhere, and becoming mesenteric only by a later extension. Such cysts arise generally in the ovary or in the head of the pancreas. In addition to these, true cysts are certain pathological conditions of the lymphatics of the mesentery, which have been mentioned by Augagneur and others. These are (1) lymphatic varices; (2) lymphatic nævus; (3) lymphangioma cavernosum of Weichselbaum.

(1) *Serous Cysts.*—Serous cysts occur not only in the mesentery, but also with moderate frequency in the mesocolon, especially in the descending mesocolon. The cysts may be unilocular or multilocular. (*a*) Unilocular cysts are very much more common in the mesocolon than in the mesentery. One good example, though a small one, was removed from the descending mesocolon, by Mr. Mayo Robson, during the performance of an abdominal section. The majority of unilocular cysts are small, and, as in this case, are surgically unimportant. (*b*) Multilocular cysts are much more common than unilocular cysts in the mesentery proper. A very excellent example of this I am enabled to quote through the kindness of Mr. T. R. Jessop. The case represented in Fig. 3 was under the care of Mr. Edwin Lee, of Dewsbury, who has kindly furnished me with notes of the case. A very interesting case, and one of the best recorded, is that of Dr. Robinson, an account of which appears in the *British Medical Journal* of January, 1891. The fluid contained in all these cysts has the following characteristics:—It is a pale, clear, straw-coloured fluid, of specific gravity 1015 or 1016, contains a large amount of albumen, and is alkaline in reaction. The cysts are therefore distinguished by these characters of the fluid from barren hydatid cysts, with which they might otherwise be confounded. With regard to the origin of these unilocular and multilocular cysts. It may be twofold—(*a*) From a dilatation of a portion of a lymphatic vessel, occluded as the result, probably, of some inflammatory disturbance. (*b*) From hemorrhages between the

layers of the mesentery. Richet has insisted especially on this mode of formation of serous cysts. Cases that might well have been taken for serous and not hemorrhagic cysts, will be quoted later under the heading of blood-cysts.

(2) *Chyle Cysts.*—The origin of chylous cysts of the mesentery is probably manifold. Chylous cysts are either unilocular or multilocular. Two very good samples of the unilocular variety are afforded by the following cases which came under my care :—

M. R., aged 18 years; female. When first seen by me, suffering from symptoms of intestinal obstructions. On examining the abdomen, I found a little distension and slight tenderness everywhere. To the right of the umbilicus was a slightly movable lump, the size of an orange. This was dull on percussion, was surrounded by an area of resonance, and had a fairly well-defined edge, and was very tender. On opening the abdomen I found a cyst, of the size described, in the mesentery of the lower ileum. I removed it, and stitched the opposing layers of peritoneum at the base together, folding the edge over so that the peritoneal surfaces were apposed. Recovery was uneventful.

On October 4, 1896, I was asked to see a child, E. W., male, aged 7 years, by Dr. Churton. On examining the abdomen, there were three distinct coils of intestine, the vermicular contraction of which was readily seen in the upper left quadrant of the abdomen. The right side of the abdomen was noted as being dull "as if from the presence of fluid." On opening the abdomen, I found a large mesenteric cyst holding two pints and two ounces of yellowish turbid fluid. The cyst filled almost the whole of the right side of the abdomen, and, owing to the gravitation of the fluid to the posterior wall, had left the pedicle thin and taut. The child died of shock two or three hours after the operation. A somewhat similar, though less acute, case is recorded by Dr. Syms.

Dr. Rasch read the report of an interesting case before the Obstetrical Society, in November, 1889. In the multilocular cysts it has been noted and recorded by Ducasset that one loculus of the cyst may differ as regards its contents from the rest. The character of the fluid found in chyle cysts is as follows :—It is a creamy white or yellowish liquid, of specific gravity 1012 to 1020, alkaline reaction. Examined microscopically, white corpuscles are seen in abundance, and some immature red ones. There are fat globules in great quantity, and a large proportion of very finely granular amorphous material.

(3) *Hydatid Cysts.*—The recorded cases of hydatid cysts are not very numerous. The largest recorded is that of Dr. Carter. Hydatid cysts may here, as elsewhere, undergo spontaneous degeneration.

(4) *Blood Cysts.*—These are almost always traumatic. A hemorrhage into the mesentery may result in :—(*a*) A pure blood cyst; (*b*) a sero-sanguineous cyst—serous cyst; (*c*) a hemorrhage into a pre-existing cyst; (*d*) a hemorrhage into a mesenteric growth; (*e*) a solid tumour.

(5) *Dermoid Cysts.*—Cases of dermoid cysts of the mesentery are recorded. There are congenital remnants in the mesentery

from which a cyst might be supposed to develop. These are the remains of the Wolffian and Müllerian ducts and the vitelline ducts in connection with Meckel's diverticulum. The cysts are more frequent in women, and as a rule do not attain any large size.

(6) *Cystic Malignant Diseases.*—These are hardly cases of cysts, properly so called, of the mesentery, but they have been so diagnosed, the exact condition being ascertained only by operation or after death. It is for this reason that I include them here.

Cystic disease of the mesentery is very much more common in women than in men. The only form of cyst found with perhaps equal frequency in the two sexes is the hemorrhagic cyst, as one might suppose from the mode of origin. Dermoid cysts have been found only in women. The extremes of life are not exempt from this disease. The size of the tumours is extremely variable. They are sometimes so small as to be of no clinical significance, to cause no symptoms, and to require no treatment. They are sometimes so large as by their mere physical bulk to cause death.

Briefly, to summarise, the most characteristic signs of the cyst there are—(1) Prominence of the fluctuating tumour towards the umbilicus; (2) great mobility, especially in the transverse direction, and the possibility of rotation round a central axis; (3) the presence of a zone of resonance around and a belt of resonance across the cyst.

Clinical Symptoms.—Cysts may be so small in size and so quiescent as to be of no clinical significance. The remaining cases, so far as symptoms go, may be most usefully classified under two headings. (1) The Chronic Cases.—The cyst, whose characteristics have been enumerated, causes by its presence in the abdomen certain symptoms. The chief of these are:—(*a*) Pain.—Pain is more or less acute, according to the rapidity of growth of the tumour. The more rapid the growth the greater the severity of the pain, and *vice versa*. The pain is local, in and around the tumour, and radiating to the flanks, groin, and thighs. As a result of the pressure exerted on the intestine, and the consequent partial closure of the canal, there are colicky pains, due to vermicular contraction of the hypertrophied muscular fibres as they attempt to overcome the obstruction. There may be, but most commonly is not any, tenderness of the abdomen. (*b*) Intestinal disturbances.—Constipation is the rule, but the severity and duration of it will, of course, largely depend on the position, duration, and size of the tumours. There is sometimes vomiting, and very rarely there may be persistent and intractable diarrhœa. (2) Acute cases.—As will be readily grasped from the account of my cases given above, the onset of this group is

strictly that of acute intestinal obstruction. The causes which have been suggested as bringing about acute obstruction in cases of mesenteric cysts are:—(1) Irritation of the solar plexus by pedicle of cyst; (2) compression of the intestine, amounting in some cases to gangrene; (3) formation of adhesions and strangulation by them; (4) onset of acute peritonitis, owing to rupture of the cyst or its pedicle; (5) strangulation over a band formed by the pedicle of the cyst (my own case).

Differential Diagnosis.—Mesenteric cysts are not uncommonly diagnosed as ovarian or parovarian cysts. This has unquestionably been the most frequent error. Mistaken diagnoses of kidney, liver, spleen, and pelvic tumours have been made. Cysts of the urachus, pancreatic cysts, and lipoma of the mesentery are forms of disease not unlikely to be difficult of differentiation. A fluctuating tumour of the abdomen, which lies at first laterally, but which, enlarging, tends to occupy the middle of the abdomen, which, pointing towards the umbilicus, is freely movable, especially in a transverse direction, capable of rotation on its own axis, surrounded by a zone resonant on percussion, and crossed by a belt of resonance, can be no other than a mesenteric cyst.

Termination.—Cases not operated upon may terminate in any of the following ways:—(1) The cyst, especially when hydatid, may retrogress, or remain quiescent; (2) perforation may occur into the intestine, and the contents of the cyst be discharged; (3) perforation of cyst or pedicle into the peritoneum, and the onset of acute peritonitis; (4) extreme emaciation may end in death—the result, most probably, of compression of or other interference with the lacteals; (5) acute intestinal obstruction may ensue.

Treatment.—Operative interference is necessary in both acute and chronic cases. As soon as the abdomen is opened, two methods of procedure are open to the surgeon. He may—(1) Stitch the cyst wall to the parietal peritoneum and open and drain the cavity. (2) He may remove the cyst after aspiration either by cutting through the opening layers of peritoneum in the pedicle, inverting the edges, and applying a series of Lembert sutures, draining the peritoneum or not, according as may seem fit; or, if no pedicle is found, the peritoneum may be incised over the centre of the tumour and the cyst enucleated. Authorities who have written upon this subject have generally recommended the former method of treatment, and statistics have been compiled comparing, I believe unfairly, the mortality from the two procedures. The great majority of the cases recorded are isolated experiences of individual surgeons, and it is only reasonable to assume that statistics based upon them are, as guides to our own conduct, wholly and completely worthless and unsatisfactory. I venture

to think, therefore, that the best recommendation that could be given would be this: that the choice of operation to be performed should vary according to the case. If a case belongs to the chronic group above mentioned, and especially if there has been no serious general wasting, it would be doubtless advisable and more proper to remove the cyst altogether. If the case is very acute, the sooner the operation is completed the better. Even in this class of cases it might, however, be advisable sometimes to remove the cyst, but, as a routine practice, I must give it as my opinion that the less prolonged and the simpler operation, would be attended with a larger measure of success.—*Annals of Surgery, July*, 1897.

80.—PALLIATIVE AND OPERATIVE TREATMENT OF FISTULA IN ANO.

By John D. Blake, M.D., Boston.

[Only parts of Dr. Blake's paper can be given here.]

The treatment of fistula may be divided into palliative and operative, and by far the greater part is operative. The non-operative methods are numerous, but all may be classed under one of the following heads:—(1) Simple cleanliness; (2) Dilatation of external opening and packing with gauze; (3) application of caustics; (4) introduction of ligature, preferably elastic.

The cases to which any of these methods are applicable are those not attended with acute inflammation, or the presence of much pus; those which are not extensive; those which present a direct tract, without diverticula or branches; those which do not extend through the levator ani muscle; and, probably also, those which are not tubercular, or which do not show symptoms of being tubercular, though to the exclusion of this latter class some writers would disagree. It is obvious that this classification limits to a marked degree the non-operative treatment; but beyond these limits the writer is convinced that palliative treatment at present should not be advised or undertaken. Exception, of course, is made of those rather rare cases in which, on account of age or the general condition of the patient, there is a definite contraindication to operation, or in which the patient refuses operation, and desires treatment, which is given with the distinct understanding that it will probably be insufficient.

The choice in operative treatment is practically limited to two methods:—(1) Free incision, with granulation from the depth of the wound to the surface. (2) Removal of the fistulous tract by dissection and uniting the wound by sutures to secure

healing by first intention. The second method may be modified in some cases by curetting instead of dissection. These methods may be briefly described as incision and excision.

(1) *Incision.*—In preparation for any operation on fistulæ, the patient's bowels should be moved by cathartics, preferably saline, on the day preceding the operation, and by enema on the morning of the operation, and, if possible, not more than two hours before ether is administered. The diet for a day or two preceding should be exclusively meat broths. The position of the patient on the table may be either that of dorsal lithotomy, or on the side on which the main opening of the fistula is situated, with the knees flexed sharply on the abdomen. Mechanical cleanliness must be encouraged by shaving, and antisepsis rather than asepsis sought for. So far as possible, fistulæ should not be operated upon while acutely inflamed. [The details of the operation have had to be omitted here.] As a rule, the dressing should be changed on the second day after the operation, and each day after that. Thorough cleansing is essential, and it is best to use peroxide of hydrogen, permanganate of potash, or corrosive sublimate. The packing should be carefully introduced to the bottom of the wound, and in small quantity. Care should be taken not to allow pocketing of the discharge, nor to interfere with the granulation by too vigorous dressings. The bowels should not be moved before the fourth or fifth day, and an enema of warm sweet oil (four ounces) should be given and retained for one or two hours to soften the fæces, before the soap-suds enema which is intended to clean out the rectum. The diet after, as before, should be exclusively animal broths, for at least four or five days, since these produce least fæcal mass. The patient should lie preferably on the side opposite the fistula. The after-treatment is, in a majority of cases, at least, as important as the operation. The patient should be kept either in bed or lying down while there is a granulating area of any considerable extent, as the motions of walking are not conducive to healing. In packing the wound, iodoform gauze has given the greatest satisfaction. The duration of the granulating process varies extremely. It is rarely less than three weeks, except in the most superficial cases, and often reaches three months and more. It is especially long in the cases perforating the levator ani, and in cases originating from necrosis of the coccyx, or from the disintegration of pelvic glands. Whenever the internal sphincter is involved, the patient must be expressly warned beforehand of the possibility of incontinence. Rarely is it true of solid fæces, but often of gas or liquids; and not infrequently this is a permanent condition.

(2) *Excision.*—In order to avoid the slow granulation of a deep wound, American surgeons began to sew up certain

cases of fistula, with the hope of shortening convalescence. At present fistulæ are not sewed up indiscriminately after operation, but the cases for excision are carefully chosen, and the value of cleanliness and antisepsis during and after the operation is fully recognised and appreciated. The type of fistula, therefore, to which this method is applicable, is non-inflammatory fistulæ, of moderate extent, with few branches; and also blind internal fistulæ of all varieties. The fibrous walls must be removed, preferably by dissection, sometimes with the curette. Granulations or pockets must be cleaned out with curette or Pacquelin cautery, hemorrhage stopped, and the walls approximated by deep sutures. Silk is the material usually used. It is advisable to introduce each suture so that it encircles the wound and does not pass through its sides. For this purpose the so-called fish-hook needle has been invented. A strong needle with a sharp curve is essential, a Hagadorn preferably. The sutures vary in number according to the length of the fistula, and should be inserted at least as often as half-inch intervals. Sutures are removed in from three to six days; the dressing should be a wet corrosive pad, 1—3,000. The pain following the operation is apt to be greater than in simple incision. If the case is not progressing favourably, heat and redness increase, with the signs of retained pus; the stitches are removed alternately, and even in these cases a considerable amount of union is often gained. It is sometimes advisable, especially in old fistulæ, to insert an iodoform bougie into the bottom of the wound, and sew the sides together around it. In superficial fistulæ it is almost invariably successful. In deeper cases it sometimes succeeds unexpectedly. It has never found much favour among English operators.

No matter what the method of treatment may be, a certain percentage of cases which seem simple enough, will be found to be either obstinate in healing, or upon investigation to have recurred after a short period of apparent cure. In obstinate cases, second and third operations are sometimes necessary.

The question of advisability of operating upon fistulæ in patients suffering from pulmonary tuberculosis has been discussed at great length by almost every writer upon the subject. And yet the necessity for such extended discussion is not easily apparent. Of the 100 cases alluded to in the City Hospital, only three had symptoms which were considered of sufficient importance to be called phthisis complicating fistula. These three were operated, and healed readily, and were discharged nearly well in one, two, and four weeks respectively. While it is certainly true that occasional cases may be cured by cleanliness, caustic, or simple packing, there are still only three methods which may be seriously considered in the treatment of

fistula; and their importance and value rank in the order given:—(1) incision and packing, (2) excision and suture, (3) elastic ligature. And in all of these methods, the after-treatment is at least as important as the operation itself. —*Boston Medical and Surgical Journal, September* 2, 1897.

ORGANS OF URINE AND GENERATION.

81.—EARLY DIAGNOSIS AND MISTAKEN DIAGNOSIS IN CASES OF TUMOUR OF THE BREAST.

By Charles A. Powers, M.D., of Denver, Col.

[The following is taken from Dr. Powers's paper:]

The frequency with which the female breast is the seat of a tumour is well known to all practitioners of medicine, but the difficulties attending accurate diagnosis are appreciated only by those who see many of these cases; and as correct diagnosis forms the key-note to successful management and favourable prognosis, I have felt that a recital of some of my own errors might be of value to others. Of such vast importance in the management of malignant growth of the breast is early diagnosis, that too much stress cannot be laid on the principle that every lump or nodule in the gland is to be explored, unless there be some distinct contraindication; such contraindication will rarely be found. Women are prone to overlook these lumps or to conceal them, and all surgeons know how frequently they appear with a mammary tumour, which, perhaps, is as large as one's fist. The remedy for this, so far as a remedy may be found, lies in impressing on the laity the fact that all lumps and growths are important, no matter how small they may be, and that competent advice thereon should be sought at the earliest possible moment. Physicians can do much in this way; they should lose no opportunity of informing their patients that all bunches and growths ought to be attended to, and that the benign tumour of to-day may be malignant in the future. Successful management of malignant disease may to-day be summed up in these words:—Early recognition, early and thorough operation, and careful surveillance of the patient for many years afterwards. Permit me to cite some of the errors:—

Case 1.—Mrs. S., 35 years of age, was referred to me March 5, 1892, by Dr. Geoffery R. Bourke. For some months she had noticed a small lump in the upper, outer quadrant of the left breast. This mass was about the size of a robin's egg, somewhat flattened, rounded, freely movable, and the skin over it normal, the nipple not being affected. There was nothing to be felt in the axilla or in the supraclavicular space. The "feel" of the tumour seemed to be that of a fibro-adenoma, and the patient and her

husband were advised that the growth was probably benign, but that it possibly might be found to be malignant. Their consent was obtained to a complete operation in case it was thought advisable. On cutting into the growth it seemed to be malignant, and the breast, pectoralis major muscle, and axillary contents were excised. Microscopic examination of the growth proved it to be a medullary carcinoma. One small mailgnant gland was found in the axillary fat. The patient had a secondary mass removed two years later, and died of internal recurrence at the end of three years.

Case 2.—This case was similar to the foregoing, except in that the mammary lump, which was the size of an almond, seemed to be so certainly benign that it alone was removed. The microscope showed it to be carcinoma, whereupon the "complete" operation was performed. There were two or three small malignant glands in the axilla. This patient is free from recurrence, and it is now more than five years since her operation. She was 32 years old at that time.

Case 3.—Mrs. X., 40 years of age, was referred to me during June, 1893, by Dr. T. T. Janeway of New York. For some months she had noticed the progressive growth of a lump in the right breast. Examination revealed an irregular mass of the size of an apple in its inner, upper quadrant. This mass was deep seated; it seemed to be hard and partially fixed. Provisional diagnosis of carcinoma was made. At the time of operation an incision was made into the mass, and it was found to be a simple cyst. This alone was dissected out.

Case 4.—This was another instance of the same error. The patient, a woman 38 years of age, was referred to me by Dr. Jas. A. Hart of Colorado Springs, during February of the present year. A week before I saw her she first noticed a mass the size of a small fist in the upper, inner quadrant of the right breast. She at once showed this to Dr. Hart, who pronounced it cancer, and immediately sent her to me for operation. On careful examination I could not doubt that the growth was malignant. It was hard, nodular, and non-fluctuating; it seemed to be carcinoma. At the time of operation, incision into it revealed a large, irregular cyst. This was dissected out. At one or two places the cyst wall seemed to be hard and suspicious-looking, and Dr. H. C. Crouch, who was present, examined it microscopically, but failed to find evidence of malignancy.

In each of these instances, incision into the tumour at the time of operation revealed the cystic nature of the growth. The exploring needle before operation would have shown as much, but the diagnosis seemed so fairly certain that I did not make use of it. We are not to forget that cysts and abscesses sometimes are mistaken for malignant growths, and an entire gland needlessly sacrificed. I myself came very near doing this in one case, in which a mass, which I thought was probably carcinoma, proved on incision to be a hæmatoma, and in another, in which I mistook tuberculosis of the breast for cancer. Fortunately, the entire breast was not sacrificed in the first of these instances, though it was deliberately removed in the second. I was not so fortunate, however, in another case, for in this I removed the breast and axillary contents for a small lump, which seemed at the time of operation to be carcinoma, but which the microscope showed to be a fibro-adenoma. Some of you may remember that I reported

the case to this Society some eighteen months ago, contrasting it with another in which a small lump, which seemed at the time of operation to be benign, proved to be malignant, and I was obliged to return and complete the removal of the breast, pectoralis major muscle, and axillary contents. Added cases have served to impress upon me the value of a microscopic examination of uncertain, or, indeed, of fairly certain, tumours at the time of operation. This consumes but a few moments, perhaps eight to twelve minutes, and may be of great diagnostic value. So, when a tumour, which we think to be benign, is found by the pathologist to be malignant, our course is clear, while if he fails to find evidence of malignancy we are justified, in ordinary cases, in removing the growth itself, submitting it to him for thorough examination, and being governed by his final report as to further procedure. True, there are many breast tumours in which we need no evidence in addition to the clinical signs, indeed, the majority fall in this category, but there are many in which we require all possible aid.

Exceptional lumps in the breast may warrant delay and watching, but this delay is not to be made without careful thought and study. I have seen three instances of what Mr. Herbert Snow calls "dispersible tumours of the breast," lumps which disappeared in a few weeks or months. One of these was in a little girl 7 years of age, from whose mother I had removed a fibro-adenoma of the mamma. Such admirable papers have been recently published by Bull, Richardson, Warren, Halsted, and others, that I refrain from speaking of the provisional differential diagnosis and management of mammary neoplasms, and content myself with endeavouring to impress upon you the absolute importance of the earliest possible attention in such cases, as well as my own conviction, a conviction based on the operative care of some ninety patients with breast tumours, that accurate clinical diagnosis is often difficult, and, indeed, at times impossible.—*Medical News, August* 28, 1897.

82.—A CASE OF CATHETER FEVER; DEATH IN TWENTY HOURS; NECROPSY.

By Dr. T. Whitehead Reid.

Urethral fever is ascribed to two entirely different causes. By some surgeons it is considered to be due to a reflex irritation of a kidney affected with acute or chronic interstitial nephritis, while others attribute it to the absorption of micro-organisms from the urethra. It is probable that each of these suggested causes may suffice to give rise to urethral fever, but it has been customary to look upon those cases where death follows in a few hours after some slight urethral procedure, such as the

passing of a catheter, as due to reflex action, as it is thought that the fatal result is too rapid for it to be due to sepsis; but Albarran has reported a case of internal urethrotomy in which the bacillus coli communis was found in the blood of the patient, who died twelve hours after the operation. On the whole, it may be said that the majority of the cases are due to septic infection, but that a few may be caused by reflex irritation.

A man, aged 47 years, was admitted to the Kent and Canterbury Hospital on September 24, 1897, for stricture. He first began to have trouble in passing urine ten years ago, while in the army in India, where he served for fourteen years, and was several times treated for venereal disease and fever. Two years ago his stricture was dilated up to No. 8, but he neglected to continue the use of the catheter, and the difficulty in passing urine soon recurred. During the previous three months several attempts had been made to pass the catheter without success and without any untoward after-symptoms, until subsequently to an attempt on Sept. 1, he had a somewhat severe rigor, and on the next day commenced with a slight attack of facial erysipelas, which passed off satisfactorily. On admission the patient appeared to be in good general health. His urine was of specific gravity 1018, acid, and contained neither pus nor albumen. On September 25, at 1 p.m., an attempt to introduce a catheter was made, several varieties of small-sized gum elastic and silver instruments being used, but without any of them reaching the bladder. The attempts were continued in all for about ten minutes, and were followed by no hemorrhage from the urethra. At 3 p.m. he commenced to shiver, and vomited after taking some brandy. At 3.45 p.m. the temperature was 104° F. He again vomited at 4.15 p.m., and passed fæces and urine involuntarily. He now became very restless, and the pulse began to fail. At 5 p.m. the temperature had reached 106·6°. He was unconscious, and the pulse was imperceptible at the wrist. A hypodermic injection of strychnine and ether was given, and an enema containing two ounces of brandy in six ounces of hot water, and he was cold-packed. He soon recovered consciousness as the temperature fell. The pulse also improved. At 6 p.m. the temperature was again rising, and had reached 105·4°. Tepid sponging and cradling were ordered, with a repetition of the hypodermic injection. The temperature now gradually fell, and at 11.30 p.m. was 100°. The pulse, however, was still only just perceptible at the wrist; otherwise he seemed to have got over the attack, and it was hoped that no further unpleasant development would arise. During the small hours of the morning, however, the heart again failed, and the temperature steadily rose to 103·4°, and, in spite of stimulants, he died at 7 a.m. The urine after the rigor

commenced was all passed involuntarily into the bed, but a specimen obtained from the bladder after death was loaded with albumen, and showed 0·5 per cent. of urea.

Necropsy.—At the post-mortem examination (permission for which could unfortunately not be obtained until thirty hours after death) a long stricture in the spongy and membranous portions of the urethra was observed, with dilatation and hypertrophy of the urethra and bladder behind. There was no laceration of the mucous membrane of the urethra or dilatation of the ureters. The kidneys weighed eight ounces, and presented no naked-eye changes save slight congestion. Decomposition was too advanced for microscopic examination to be undertaken. The heart weighed twelve ounces; the muscle was pale and flabby, and the endocardium was deeply stained. None of the other viscera presented anything abnormal, with the exception that there were a few petechiæ under the visceral layer of the pleuræ, and some congestion of the bases of the lungs.—*The Lancet, November* 13, 1897.

83.—THE TREATMENT OF TUBERCULAR CYSTITIS.

By M. Banzet, of Paris.

For many years, M. Guyon and his pupils at the Necker Hospital have devoted special attention to the treatment of tubercular cystitis. The experience thus acquired is ably presented by M. le Dr. Banzet, in the June number of the *Ann. d. mal. d. org. génito-urin.*, Paris. Until the extreme sensibility of the tubercular bladder was properly appreciated, the advantage of employing any local treatment whatsoever was seriously questioned. It was found that aggravation of the symptoms resulted from the best-intentioned therapeutic procedures, unless not only was the agent selected for local application that which had been found to be beneficial by experience, but that it must not be employed above a definite degree of solution, nor must any more than a small quantity be introduced at a time. The least distension of the bladder may increase the frequency and pain of micturition, and determine hæmaturia. For this reason it is authoritatively stated, that in the majority of cases the use of the cystoscope is contra-indicated. Of no less importance than mechanical distension, and chemical irritation by the use of concentrated solutions, as regards their injurious effects on tubercular cystitis, it is the risk of septic infection, which may be said to attend all methods of local treatment. As in other tubercular conditions, the addition of sepsis constitutes a serious aggravation of the original malady. Since these various indications have been recognised and acted upon, the authorities

at the Necker Hospital have systematically adopted local treatment as one of their most valuable resources.

From the point of view of prognosis, it is, of course, to be borne in mind that cases of vesical tuberculosis differ from each other just as much as those of tubercle in other organs (*e.g.*, lung). As far as the bacteriological examination of the urine is concerned, the cases could be differentiated into two groups,—those in which bacilli were found in abundance, and those in which they were very scarce, or in which they could not be discovered. The latter group naturally yielded a higher percentage of recoveries. In assuming the management of any given case of tubercular cystitis, the first duty is to place the patient under conditions in which he is placed favourably as regards his tubercular disease. It is a common mistake, when a patient presents himself with persistent and painful urinary symptoms, and especially if there be albumen in the urine, to prescribe a diet in which milk figures more or less exclusively. This is just as pernicious in tubercular cystitis as it is beneficial in the simple and gonorrhœal types of vesical inflammation. Every tubercular patient must be fully nourished. In prescribing internal remedies, due regard must be paid to their effect upon the appetite and digestive functions. Creosote, for example, which has been found to be of great service, must be given in very small doses, and over a long period. The following is the formula employed at the Necker Hospital:—Creosote, ·05 grm.; iodoform, ·01 grm.; arseniate of soda, ·001 grm. This is given in the form of pills, of which two are taken at breakfast and at dinner. M. Guyon lays stress on salt baths and change of air. Should definite improvement not result from this general treatment, or should the symptoms be such as to forbid delay, then recourse must be had to local applications. A number of agents which had been proved of service in other forms of cystitis have been carefully tested and found wanting, namely, boracic acid, iodoform, lactic acid, sulphate of copper, formaline, nitrate of silver. The drug which yields the best results, and which has been employed at the Necker Hospital since 1890, is corrosive sublimate, in aqueous solution, beginning with a dilution of 1 in 10,000, and gradually increasing the strength to 1 in 5,000. The solution is to be *instilled in small quantity* every day or every second day. Guaiacol, although very soothing to the sensitive mucous membrane, was found to be distinctly inferior to the sublimate.

Operative interference is indicated when the symptoms of pain and frequency are very severe, and when no improvement has resulted from general and local treatment; distinctly, therefore, a more serious group of cases. Scraping the bladder, through the perineum in the male, and through the urethra in the female, followed by thorough drainage, has yielded the best

results. The perineal route is preferred, because it is easier, because it gives readier access to the usual situation of tubercle in the bladder, and because the drainage it affords is the best. The only advantage of the suprapubic method is that of allowing one to *see* the seat and extent of the lesion.—*Dr. Alexis Thomson's abstract in the Edinburgh Medical Journal, August*, 1897.

84.—ON SOME SUPPURATIONS OF THE URINARY APPARATUS.

By Reginald Harrison, F.R.C.S.

[The following is taken from an abstract in the *Therapeutic Gazette*, September, 1897, p. 630. See also "Synopsis."]

The author (*The Lancet*, June 26, 1897), in an admirable paper, has selected for consideration some points which seem to arise out of the pathology of certain suppurative processes, as observed in the urinary organs in relation to the more modern treatment of surgical lesions and infections as generally practised. The advances that have been made in connection with the bacteriology of the urinary organs in reference to the kind and extent of gonorrhœal infections, have already led to the most useful applications in the way of treatment. The first point that strikes one is that many of the cases spoken of as instances of chronic suppurative urethritis or gleet, represent a far more extensive invasion than is generally supposed to be the case. In this lies an explanation of the difficulty that is not infrequently experienced, in bringing cases of this kind to a successful and speedy termination. Many gleets are merely reinfections of the urethra from the bladder, which serves the purpose of a medium for bacterial cultivation. So long as a gonorrhœa is confined to the area of the urethra, as defined by that portion of the canal which lies in front of the compressor urethræ, or "cut-off" muscle, the task of successfully combating the infecting suppuration is not usually a difficult one. The disease is within limits which can be readily acted upon by various agencies, administered either locally or by internal medication, and its course is generally limited both in severity and duration. When, however, these boundaries are exceeded, and the bladder becomes invaded, it is not easy to prevent reinfection taking place as if from an extraneous source. Hence the disease may be almost indefinitely protracted. Nor is invasion of the bladder in this way uncommon or necessarily indicated by acute symptoms such as would unmistakeably draw attention to the occurrence. In most instances of this the prostate is the only part of the urinary apparatus that may show any active indication of contact with septic products, the

mucous membrane of the bladder, though harbouring them, being singularly insensitive to bacterial influences. That infection occurs in this way may be readily demonstrated. When the bladder has been thus involved, the conditions of the urinary organs, particularly during the night, are extremely favourable for bacterial cultivations, a circumstance which may explain the constancy and degree of matutinal suppuration exuded by the urethra, which is a prominent symptom in this class of cases. It is rare, the author believes, for gonorrhœal organisms to make their way up the ureters and to invade the kidneys—a fact which is no doubt due to the guarded manner in which these ducts enter the bladder, and the constancy of the downward flow of the urine. That renal infection and urethral inflammation sufficient to cause a pyelitis of the former and a contraction or stricture of the latter can occur, has been demonstrated as possible.

The suspicion, however, that the bladder may be infected with micro-organisms should be made a matter of proof, and this can generally be done. The first portion of the urine passed should be rejected as probably containing the flushings of the canal, the balance being separately collected as representing the constituents of what may be called vesical urine. When it is possible, a catheter specimen should be obtained, where there are reasons for believing that the bladder is infected. In this way gonococci may be detected in vesical urine in cases of gonorrhœa. The mere fact that the urine is shown to contain bacteria does not necessarily imply that the individual is capable of inoculating another with gonorrhœa. Where, however, the gonococcus is discovered in the urine or the discharges of the patient, as is not infrequently the case, the author does not think there can be any doubt as to the possibility of its communication to someone else. The bacteriological examination of these secretions may furnish important evidence in determining whether a person who has been comparatively recently infected should be allowed to marry. In these cases of secondary infection of the bladder, caused by extension from the urethra, he has for some time placed much reliance upon the irrigation of the bladder and urethra with antiseptics, as described by Dr. Janet, with some modifications. The apparatus consists of an ordinary hydrostatic bladder-tank, holding about one pint of water, and fitted with a nozzle, to which a No. 8 Jacques's rubber catheter can be attached. The tank is elevated about six feet from the ground, and is filled with warm water containing 30 minims of Condy's fluid to a pint of the water. For lubricating the catheter he uses carbolised vaseline. The patient having emptied his bladder spontaneously, is placed in the recumbent position, and the catheter is then passed. Before the nozzle of the irrigator

is connected with the catheter as it lies in the bladder, the fluid is allowed to run off for a few seconds, so as to ensure that there is no free air in the tube of the apparatus. Then the connection is made and the fluid is allowed to flow into the bladder by degrees until the patient is conscious of feeling distension. He generally uses from twelve to sixteen ounces for this purpose, allowing it to enter the bladder in jets of about three or four ounces at a time. In this way the feeling of any sudden or extreme fulness is avoided, and the entire area of the mucous membrane of the bladder is unfolded and opened out, and thus comes in contact with the permanganate solution. When a sufficient degree of bladder distension is obtained, the catheter is slowly removed, care being taken not to allow the fluid to escape. He then usually lightly palpates the bladder above the pubes with the hand before the patient stands up. This he should then do, and proceed to empty his bladder of its contents by his natural efforts. Thus not only is the bladder washed out, but the whole urethra is flushed in a manner that is impossible by any artificial means. As the patient is voiding the contents of his bladder, it is well to direct him to suddenly interrupt the outflow once or twice by pressure with the finger on the penile urethra. In this way the lacunæ of the canal are also distended and flushed by the irrigating fluid. This completes the process, which may be repeated once or twice in the twenty-four hours, until the urine and the uretnral mucus are found free from organisms. Most patients, after proper instruction, will be able to carry out all these details. On the conclusion of each irrigation, the patient should rest for a time in the recumbent position. The author has only referred to the permanganate of potash in great dilution as the flushing agent for use in these cases. Half a drachm of Condy's solution, gradually increased to a drachm, in a pint of water, has given him good results. Neutral sulphate of quinine (one grain to the ounce) may also be used. More rarely he has employed nitrate of silver (one-sixteenth grain to the ounce) and perchloride of mercury. The last sometimes produces a great deal of pain, though only used in the proportion of 1 in 10,000. He has no doubt, for aborting infections, the perchloride is the most effective. When used for the latter purpose in the proportion of 1 in 10,000, and after the solution has been spontaneously voided from the bladder as in the act of micturition, the bladder may be filled with a strained solution of albumen—say that yielded by one fresh egg—in a pint of tepid or nearly cold water. If this is done, and the albuminoid solution voided in like manner from the bladder, any pain, smarting, or spasm that the perchloride solution produced at once ceases. Similarly, a weak solution of chloride of sodium, injected into the bladder after a solution of nitrate of silver has been used for this

purpose, not only removes any irritation the latter may provoke, but coats over the inflamed mucous membrane with a thin layer of chloride of silver, which often affords much relief when cystitis is present. Probably there is no better bactericide than nitrate of silver in these cases, but it requires to be used with the precautions mentioned, when good results may be obtained. In this class of cases, where suppuration proceeds directly from infection, the internal administration of bactericides may be advantageously combined with the local treatment just referred to.

85.—PARTIAL RESECTION OF THE BLADDER FOR ULCER CAUSED BY THE DISTOMA HÆMATOBIUM.

By B. Farquhar Curtis, M.D.,

Professor of Clinical Surgery in the New York Post-Graduate School and the Women's Medical College of the New York Infirmary.

[The following is taken from Dr. Curtis's paper:]

The manner by which the parasite enters the body is as yet uncertain, but it is generally supposed to find its way into the urethra. The worm lives in the renal and vesical veins, producing eggs which are discharged by the urine. The eggs are not unlike a kernel of oats in shape. They measure from 80 to 120 micromillimetres in length and 30 to 40 in width. They become embedded in the mucous membrane of the bladder, and occasion capillary hemorrhages, local ulceration, and cystitis if infection by pyogenic germs takes place. Calculus has been observed as a secondary result, and malignant tumours have developed in the ulcers due to the parasite as reported by Fenwick and others. The symptoms are usually slight and the general health is not affected, but in some cases the patient's sufferings are as great as those occasioned by the worst forms of cystitis, of vesical calculus, or of tumour. The course of the disease may be long or short, whether the symptoms are severe or slight. The mild cases do well under medical and local treatment, such as irrigation of the bladder; in fact, some of them require no treatment whatever, the symptoms disappearing spontaneously; but in some cases symptoms resembling those of a severe cystitis, in addition to the hæmaturia, have persisted for ten years or more, rendering the patient a chronic invalid. It is the great suffering endured by such patients which has prompted the publication of the following case, in a man aged 29, in which the bladder symptoms were completely relieved by operation.

Operation.—The usual median incision was made, and the bladder opened. Examination by touch and sight revealed a

diseased area of mucous membrane surrounding the mouth of the right ureter, nearly circular in shape, and about an inch and a half in diameter, extending well over towards the left ureteral orifice. This area was the seat of a nodular infiltration, increasing the thickness of the mucous membrane to three times the normal. Blood oozed from the ulcerated surfaces. The gross appearances were so exactly those of sarcoma that it was decided to extirpate the diseased tissue, and this was done with the scissors, removing a thin layer of the internal muscular coat of the bladder along with the mucous membrane, and cutting well beyond the evidences of disease on every side. The hemorrhage was slight and easily controlled by pressure and actual cautery. A probe was inserted in the ureter after the excision, and the canal slit up where it traversed the bladder wall obliquely, to enlarge the orifice and lessen the dangers of cicatricial contraction. The bladder was lightly packed with gauze, a large drainage tube being also placed in it with its lower end touching the base of the bladder to allow the escape of the urine. A heavy gauze and cotton dressing externally took up all discharges. The patient recovered.

The report of the hospital pathologist, Dr. J. S. Thacker, states that papillary outgrowths were seen in the diseased mucous membrane, covered with a thickened epithelial layer, which also subdivided them by frequent in-dippings where the eggs were situated. Briefly stated, this is the report of a case in which excision of the parasitic deposits in the mucous membrane of the bladder, relieved at once and permanently the hæmaturia and vesical irritability in a man who was very anæmic from loss of blood and exhausted by suffering. It is hardly necessary to mention that the error in diagnosis was due to the rarity of the parasite in this country. The treatment was evidently correct, and the error in diagnosis was a fortunate thing for the patient, as otherwise such a radical measure would hardly have been considered justifiable, for operations for this condition have rarely been undertaken except when complicated with a vesical calculus. In a few cases treated by simple cystotomy and drainage, the results have not been satisfactory.—*British Medical Journal, October* 9, 1897.

86.—CYSTIC DISEASE OF THE KIDNEY.

By David Newman, M.D.,
Surgeon, Glasgow Royal Infirmary.

[After discussing with illustrative cases the various cystic diseases of the kidney, including that due to parasites, the author makes the following remarks on treatment:]

We now come to consider the general question of treatment of cystic diseases of the kidney. Single cysts of the kidney seldom require treatment at the hand of the surgeon; it is only when they attain such dimensions as to cause pressure symptoms, that one is justified in resorting to an operation. In one case considerable doubt was entertained as to the diagnosis between a simple cyst and a hydronephrosis, but by cutting down on the kidney the diagnosis was cleared up, and the malady cured. Such cases are, however, rare.

The treatment of general cystic degeneration of the kidney generally falls to the physician rather than to the surgeon, whose aid is seldom asked in such cases when the diagnosis has been correctly made; but, as I already pointed out, now that more attention is being directed to surgical diseases of the kidney, it is well that such maladies as general cystic degeneration should be taken into account in forming a diagnosis, otherwise serious errors may be made. Upon many patients affected with this disease, nephrectomy or nephrotomy has been performed, under a mistaken idea of the nature of the case. The earlier operators mistook cystic degeneration of the kidney for ovarian disease. As cystic degeneration is usually bilateral and associated with chronic interstitial nephritis, it is not a disease calling for nephrectomy, nor, seeing that the cysts are multilocular and widely distributed throughout the organ, is the patient likely to be benefited by tapping or nephrotomy. In cystic degeneration surgical interference is contraindicated. It is only in cases where the cystic kidney is moderately small in size and where symptoms of interstitial nephritis are absent, that nephrorrhaphy may be resorted to, to fix a movable organ when it is the cause of marked disturbance. In one case the displaced cystic kidney was so freely movable that occasionally the displacement gave rise to a transitory hydronephrosis, and on this account an operation was resorted to, but I may safely say that in the large majority of cases of cystic degeneration of the kidney operative interference is to be condemned.

Concerning hydatid disease of the kidney, I shall only allude to treatment as applying to the cyst so as to aid its evacuation. No internal medicaments appear to influence the life history of the parasite or the bursting of the cyst, but after rupture has taken place it may be of advantage to facilitate the evacuation of the cyst by washing out the parasites. This is best done by ordering the patient large quantities of fluids, so as to induce diuresis. With a similar object in view, gentle friction in the course of the ureter, applied either by the patient himself or by an attendant, may palliate the pain of renal colic, and at the same time facilitate the progress of the cysts from above downwards, and, during the attack, if the pains be very severe,

warm baths, hot fomentations, the subcutaneous injection of morphia, or the exhibition of other preparations of opium may be found useful. Not unfrequently the ureters become dilated, and thereby the progress of the parasite is facilitated, so that such considerable masses may escape into the bladder that difficulty may be experienced in the passage of the cysts into or along the urethra. If they cause interference with micturition, then means must be adopted to remove them.

Should cysts become impacted in the ureter, or considerable pain and inconvenience be suffered, or if the cyst increase in bulk so as to cause danger to life, without its contents escaping per urethram, the question of operative interference may be raised. Various methods have been proposed; the simplest, and probably the most efficacious, is to cut down upon the cyst, evacuate its contents, and stitch the edges of the cyst to the parietes. This operation has been performed frequently, and with satisfactory results. Thiriar, Imlach, and Péan have recorded recoveries after nephrotomy, but in a nephrectomy, by Spiegelberg, the patient died from collapse. Because of the success of puncture of hydatids of the liver, the same treatment has been proposed for hydatids of the kidney, and it is true that in some favourable cases a surgical operation of this kind has been followed by a diminution in the size of the cyst.—*Glasgow Medical Journal, September*, 1897.

AFFECTIONS OF THE EYE AND EAR.

87.—PERFORATING WOUNDS OF THE EYE.

By Frederick E. Cheney, M.D.,
Assistant in Ophthalmology, Harvard Medical School, &c.

[The following is taken from Dr. Cheney's paper:]

Immediate enucleation is the best course to adopt (1) in cases where the injury is so extensive that there is no chance of restoring vision, and little probability of an eye that will look as well as an artificial one; (2) where the wound is in the ciliary region, and the sight is lost, even though the chances are in favour of the patient's recovering with a presentable eye; and (3) where vision is lost, a foreign body is lodged in the globe, and there is little possibility of its being removed. Of course, there are other conditions where it is probable that enucleation will be the best course to pursue, but there is some doubt, and we give the eye the benefit of the doubt for a few days, and wait developments. When there is no question in the mind of the

physician that the eye should come out, its removal is to be advised and performed as soon as the patient's consent can be obtained. If immediate enucleation is not demanded, an effort must be made to save vision, or at least an eye that will not be a source of danger to its fellow. The plan of treatment will, of course, vary considerably with the nature of the injury; it is to be remembered, however, that all perforating wounds are serious, and demand the most careful attention on the part of the physician. If a foreign body is lodged in the lens, in the vitreous or some portion of the fundus, we may have no immediate inflammatory reaction, and it is simply a question of deciding what is best to be done in regard to the foreign body. The extraction of a foreign body from the globe is something which would hardly be attempted by a man in general practice, and the prevention and treatment of the inflammatory complications which are liable to arise as a result of perforating wounds, will fall more within his province.

If the perforation involves the iris or ciliary body, inflammation of a greater or less severity is to be expected, and every attempt must be made to combat it by appropriate and vigorous treatment. In the first place, it is advisable that the patient be kept in bed for a few days at least, and that the room be moderately darkened. It is also a good plan to give a saline cathartic as early as possible. The eye is washed thoroughly with a 1—5,000 corrosive-sublimate solution, the lids and surrounding tissues are carefully cleaned, and all the ordinary precautions are taken to render the operation as aseptic as possible. In spite of this, a well-marked catarrhal conjunctivitis may develop, which gets worse from day to day, and only subsides after the bandage has been removed. If the patient is obliged to go out, there will be less liability of infection if the eye is bandaged for a few hours, than if it is left exposed; also, in cases where the lips of the wound do not come into good apposition, it may be the only course to adopt, but, until the external wound is healed, the chances of infection will be much greater in the majority of cases, with a bandage than without it. The eye should be washed ten or fifteen times a day with a saturated solution of boric acid, the lids and the surrounding tissues, as well as the patient's hands, are to be kept clean, and a cold boric-acid compress should be applied to the closed lids. The patient must, however, be encouraged to open the eye at intervals of ten or fifteen minutes, in order to prevent a retention of secretions. The cold compress is of value for the first few days, as an agent in decreasing the tendency to inflammation; after the development of an iritis or cyclitis, however, it is better to use hot applications. Atropine or some other mydriatic is to be used from the beginning, and continued until the inflammation is

at an end. A 1 per cent. solution, three or four times a day, will, as a rule, dilate the pupil and keep it dilated; but at times greater frequency or a stronger solution is necessary to accomplish this, and in the more violent cases we may find the pupil getting smaller and smaller from day to day, in spite of everything that can be done. A pupil contracting under atropine is always to be looked upon as an unfavourable symptom, as it denotes an increased congestion and infiltration of the iris tissue. As just said, hot applications are advisable after an inflammation is well established; and we can make use of a hot boric-acid solution, applied as an absorbent-cotton compress, for twenty minutes to half an hour, every few hours, or we can use the popular camomile fomentations. Pain is often much benefited by heat, and, when severe, fomentations can be used very frequently. Leeches are not very generally used at the present time, but they are still frequently employed by the ophthalmic surgeon, and in diseases of the iris and ciliary body, especially, are of undoubted value. In cases where severe inflammation seems probable, it is my custom to apply two or three leeches to the temple as soon as the patient can be put to bed, and to use one or more daily until the inflammation begins to subside. Severe pain will often cease almost entirely after the application of a leech, and their application in the early part of the evening may insure a good night's sleep to the patient. In cases, also, where the pupil grows smaller in spite of the instillation of atropine, it is surprising to see how quickly a leech will sometimes cause it to dilate. Careful watching is very important, and a daily visit advisable, until the inflammatory symptoms become decidedly less marked. The case may be said to progress favourably when pain becomes less severe and frequent, when the injection becomes less intense, and the other symptoms characterising an inflammation of the tissues involved begin to subside. If these symptoms become more marked from day to day, if the eye develops tenderness in the ciliary region when pressure is made with the finger-tips, if sight decreases, we become anxious, not only in regard to the injured eye, but for the other as well, and the question of enucleation is one which it may be necessary to decide at any time.—*Boston Medical and Surgical Journal, July* 15, 1897.

88.—THE TREATMENT OF ACUTE CONJUNCTIVITIS.

By G. A. Berry, M.B., F.R.C.S. Ed.,

University Lecturer on Ophthalmology; Ophthalmic Surgeon, Royal Infirmary, Edinburgh.

[The following is from Mr. Berry's paper:]

The subjective symptoms in an ordinary acute case of mucopurulent conjunctivitis are: sensitiveness to light, tiring of

the eyes on reading, and a hot, burning feeling in them, which, in severe cases, and in particularly sensitive subjects, may even amount to more or less violent pain. The duration of an attack is very variable. The severer symptoms generally only last a few days, but may continue for weeks. As a rule, when recovery is not fairly complete in a fortnight, the treatment has been the cause of the delay. No doubt some cases have a tendency to be prolonged altogether independent of treatment. In such there has probably been some less usual microbic infection, perhaps derived from discharges from a purulent inflammation in some other part of the body, or it may be from some less evident source. The early recourse to astringents, such as alum and sulphate of zinc, is a very common cause of aggravation. The same may be said of poulticing, which, if continued for any time, may have, however, much worse consequences. The relief from pain which is afforded by poulticing at the beginning, not unnaturally gives rise to the belief that such treatment is beneficial. Continued poulticing greatly increases the swelling and vascularity, and also, by favouring the growth and multiplication of different germs, which are more or less constantly present in the conjunctival sac without doing harm, make these a source of danger in the diminished state of vitality of the tissues. In addition, therefore, to the effect of one specific kind of germ, which may cause but an unimportant reaction of no great duration, further inoculation by others of a more virulent type is apt to take place. Even iced compresses, which are so frequently recommended, more often do harm than good. This depends to a great extent upon the manner in which they are usually applied, namely, as compresses laid upon ice, and then transferred to the eye, and frequently changed. To get the proper effect from ice, which in any case should only be used at the beginning, and before the secretions have become altered and increased, the temperature of the compress must always be maintained at the freezing-point. This can be done by running iced water through a coiled tube resting on the compress. It must always be borne in mind, however, that where there is any corneal complication ice applications are dangerous. On the whole, there is no advantage to be gained by ice which cannot just as well be got by the efficient use of antiseptic lotions.

In the treatment of conjunctivitis in the acute stage, the principal point to attend to is not to interfere too energetically. There is, as I have already hinted, a danger in doing too much. All that is necessary in most cases is to freely remove the secretion during the day, and to prevent its too great retention within the conjunctival sac at night. Even those who are sufficiently alive to the disadvantages of an active treatment with astringent lotions, rarely seem to take care that the more

suitable mildly antiseptic, or other bland lotion which they employ, is so used as to properly irrigate the inflamed conjunctival surface. An efficient removal of discharge is not got my merely squeezing a little lotion from a sponge or piece of cotton-wool into the lower conjunctival sac, or by using an eye-bath. In very many cases, however, the tendency to a speedy return to the normal in the absence of irritative treatment is so great, that this is not of much consequence. It certainly, however, is a better plan to irrigate properly. This may be done by allowing a pint or more of the lotion (preferably a 2 per cent. solution of boracic acid at a temperature of 90° to 98° F.) to stream by gravitation over the whole surface of the conjunctiva three or four times daily. For this purpose the vessel containing the liquid may be held 10 or 12 inches above the head, and allowed to run through indiarubber tubing, to the end of which is fixed a flattened glass nozzle. The nozzle can be readily inserted below the upper and lower lids without touching the cornea. It is usually best to begin by everting the upper lid, and, after irrigating its tarsal surface, to insert the glass nozzle behind the upper margin of the tarsus, so as to get at the retro-tarsal fold. In the more severe and protracted cases, a daily direct application to the conjunctival surface, with a camel's-hair brush, of a strong antiseptic solution is useful. The most suitable are strong (fully saturated) chlorine water and nitrate of silver in a 2 per cent. solution. Though not always so readily got, the first is the better, and when painted over the palpebral conjunctiva, causes no pain to speak of. Corrosive sublimate solutions should be avoided; they are more irritating and far less penetrating. The margins of the lids should in all cases be kept smeared with some bland ointment. Fresh lard or fresh butter do very well. Vaseline is not always pure, and may cause irritation. Boracic ointment (boracic acid ʒss, almond oil 20 mm., and spermaceti ointment ʒss) is what I generally use. The questions of light, and of the use of the eyes for reading, &c., remain to be considered. The light of an ordinary room in the daytime, when the sun's rays are not passing directly into it so as to be unpleasant to anyone else, has not any bad effect on a conjunctivitis. On the other hand, the use of dark glasses outside in bright weather is advisable. The glasses should be neutral-tinted, and not blue. The open-air, in the absence of rain or dust-clouds, is unquestionably good. Reading or writing should not be allowed. Whether as a result of inappropriate treatment or otherwise, inflammation of the conjunctiva, instead of entirely subsiding, may continue for an indefinite time as a chronic condition.—*Edinburgh Medical Journal, October*, 1897.

89.—ON SOME DISEASES OF THE EYE, THE RESULT OF SYPHILIS.

By A. Maitland Ramsay, M.D., F.F.P. & S. Glasg.,
Surgeon to the Ophthalmic Institution, and Ophthalmic Surgeon, Royal Infirmary, Glasgow.

[Much of Dr. Ramsay's paper has had to be omitted, including the details of cases. Also the diseases due to hereditary syphilis have been left out here. See "Synopsis."]

The frequent occurrence of diseases of the eye due to syphilis renders the subject one of great interest and importance. It is well known that, with the exception of the lens, each of the structures of the eyeball and its appendages may be affected, and ocular symptoms may occur either early or late in the course of the disease, and in the inherited as well as in the acquired form. My purpose is simply to give details of a few cases in which the eye has been specially affected, and to endeavour to group these in such a way as to present a clinical picture of syphilis in so far as it affects the eye. The acquired form of the disease may be first considered. The syphilitic poison may gain entrance to the system through the eye, and the primary sore then forms upon the eyelids or conjunctiva. The favourite site for a chancre of the eyelid is at the inner canthus, and the lower lid is the one more frequently affected. It is seen in men oftener than in women, and is met with at all ages. In many instances the infection is purely accidental and non-venereal, and the patients have no suspicion of the syphilitic nature of the sore. It is often, therefore, very difficult to trace to the source of contagion, and occasionally the ætiology cannot be determined. The most frequent modes of communication, however, are undoubtedly by the finger, the mouth, or the tongue, or through sponges, towels, &c., which have been previously contaminated. From this it will be readily understood how it is that medical men suffer so frequently from this particular form of chancre. Infants and young children are often infected by being kissed by a nurse suffering at the time from mucous patches in her mouth. It is common amongst the lower classes to remove foreign bodies from the eye by means of the tongue, and if the operator suffers from mucous patches in the lips, it is easy to understand how the patient receives infection. After a bruise upon the eye it is also a common practice to incise the skin and suck out the effused blood, and I have known of palpebral chancre arising from this cause. The application of the "fasting spittal" or of urine, both of which are frequently applied to inflamed eyes by the poor, may also be a source of contamination. It has been affirmed that extra-genital chancres, and more particularly those occurring upon the eyelids, are apt to be

followed by specially severe secondary symptoms, but my own experience does not tend to confirm the statement.

Case 1.—Chancre of eyelid in a boy 6 years of age; ætiology obscure; complete recovery. The cartilage of the lid occasionally becomes affected, and a syphilitic tarsitis results. *Case 2.*—Syphilitic tarsitis, followed several years afterwards by iritis of the same eye. *Case 3.*—Transient paralysis of right oculo-motor nerve, twelve years after primary syphilitic infection, and followed by atrophy of both optic nerves. Inflammation of the cornea is not a frequent result of acquired syphilis, and this is all the more difficult to explain when it is remembered how frequent is the occurrence of interstitial keratitis in the inherited forms of the disease. *Case 4.*—Severe inflammation of both corneæ, associated with the occurrence of frequent miscarriages and eruptions of the skin; history of syphilitic infection at least twelve years before the eyes became affected. The syphilitic virus attacks the uveal tract with great frequency, and often with peculiar virulence; and this is not to be wondered at when it is remembered how prone syphilis is to implicate the smaller blood-vessels—arteritis syphilitica—and this, too, even in those cases in which the secondary symptoms have not been severe. Of all the causes of iritis, syphilis is admitted to be the most frequent, and although it is difficult in the early stages to be sure of this diagnosis from the eye appearances alone, yet, as the inflammation of the iris proceeds, there often develop signs and symptoms so characteristic that all doubts are removed. Still, though every ophthalmic surgeon has formed in his own mind a clinical picture of the appearance presented by inflammation of the iris when it is the result of syphilis, yet of all the so-called characteristic signs—turbidity of aqueous, greasy spots on the posterior surface of the cornea, opacities in the vitreous, a degree of dusky red pericorneal congestion out of all proportion to the severity of the pain, which for the most part is circumorbital and nocturnal—none can be considered pathognomonic except the formation of gummatous nodules upon the iris, and situated for the most part close to the margin of the pupil. These nodules vary in size, and may not be visible until the pupil is dilated by atropine, when they are detected on those parts of the iris which are adherent to the anterior capsule of the lens. Syphilitic iritis, moreover, oftener than any other form, involves both eyes, and although the one is as a rule affected after the other, yet it is by no means unusual to find both inflamed at the same time. Relapses in the form of frequently recurring attacks are not common, but iritis when due to syphilis is liable to be complicated with, or to be followed by, inflammation of the choroid and the retina. *Case 5.*—Syphilitic iritis, characterised by unusual turbidity of the aqueous, and by the large size of the gumma on

the iris. There is usually considerable atrophy of the iris after the absorption of a gumma so large as was present in this case; but, as a rule, uncomplicated cases end in resolution, with more or less perfect recovery of eyesight. When, however, the gumma extends backwards, and involves the ciliary region, the prognosis is by no means so favourable. Severe pain and photophobia are then constant symptoms, and in virulent cases the eye may be destroyed completely, in spite of even the most energetic antisyphilitic treatment. Sometimes the disease, instead of primarily attacking the iris and the region of the uveal tract supplied by the anterior ciliary and the long ciliary arteries, lays hold on the portion deriving its blood-supply from the short ciliary arteries—the choroid proper. Notwithstanding the direct continuity of the iris with the choroid, inflammation may confine itself to the one or to the other; but in acquired syphilis independent inflammation of the former is much more frequent than of the latter. *Case 6.*—Severe choroiditis in both eyes, which occurred as one of the early secondary symptoms in an otherwise mild case of acquired syphilis. The close proximity of the choroid to the ciliary body and the iris on the one hand, and to the otpic nerve and retina on the other, renders it very easy for the inflammation to travel forwards in the one case, and give rise to a choroido-iritis, or to spread by contiguity of structure in the other, and set up a choroido-retinitis. Such complications invariably occur in all cases in which the onset is exceptionally acute, or in which antisyphilitic treatment is not carried out from the beginning with energy and perseverance. *Case 7.*—Choroido-iritis in both eyes, the pupil in the one being occluded and the iris bulged forwards, while the ophthalmoscope revealed in the other clear evidence of choroiditis-disseminata. The retina is implicated in every case of severe choroiditis, and such subjective phenomena as those included under the terms photopsia, chromatopsia, metamorphopsia, and micropsia are produced by irritation of its outer or sentient layer. Syphilitic retinitis, however, usually occurs somewhat late in the course of the constitutional disease, and most of the cases which have come under my own observation were women who had been infected years before the onset of the eye symptoms. It is needless to say that in every one of these cases treatment against the primary disease had either been wholly neglected, or, if begun, had been inefficiently carried out. Retinitis due to syphilis may, however, occur early, and one of the most characteristic examples of it which I have ever seen was the case of a medical student who, while attending a woman in her confinement, got his right forefinger inoculated, and who, when his sight began to fail, was still suffering from ulcerative paronychia. Both eyes were affected, the left, however, much more profoundly than the right. The

chief complaints were of dimness of sight—the visual disturbance being for the most part central—of muscæ, of bright flashing of light, and of distortion of outline. The ophthalmoscopic appearances of the fundus were very characteristic. The whole background of the eye appeared veiled; and this mistiness, which was thickest over the central region, rendered the optic disc and the retinal vessels indistinct. No pigmentation of the choroid was visible; but, by careful inspection of the most clouded area in front of the papilla and the macular region, a fine dust-like appearance could be detected. In favourable cases the filmy white cloud formed over the fundus entirely disappears. Probably a favourable prognosis might be given in the majority of cases, if the patient would steadily persevere with proper treatment for a sufficient length of time; at least two years. In dispensary practice, however, it is usual to find that whenever vision has improved the medicine is neglected, with the result that sooner or later a relapse takes place, and by-and-bye more or less of a cloudy haze settles permanently over the retina, which may also in the further progress of the disease become pigmented, the diminished calibre of the blood-vessels being accompanied by waxy pallor of the optic disc. *Case 8.*—Neuro-retinitis in both eyes, which occurred five months after the primary infection.—*Glasgow Medical Journal, July,* 1897.

90.—SPECTACLES: SOME CONSIDERATIONS AS TO THEIR USE.

By Frederick Bass, F.R.C.S.

It has long been recognised that many troubles arise from the wearing of improper glasses, but it is not so well known that almost as many are due to the faulty manner of wearing lenses which in themselves are quite suitable. The consideration in these columns of some points in the wearing of glasses which frequently come under the notice of ophthalmic surgeons, may possibly be of use to others. The first point to which attention should be drawn is the advisability, in all cases, of the surgeon verifying for himself that the glasses supplied agree accurately with his prescription; for unfortunately, it is no uncommon occurrence for serious mistakes to be made by the optician supplying the glasses, even to the reversal of the signs + and —. Patients as a rule have no means of knowing whether their glasses are according to prescription, and often perseveringly wear wholly inappropriate lenses supplied in error, under the impression that "they will have to get used to them."

Firstly, then, one verifies the power of the lenses in the usual way, by seeing whether corresponding lenses of the opposite sign

neutralise those supplied. It may happen that no glass in the test case quite does this, in which case the probability is that the optician has supplied the nearest lens in the inch system to that ordered in dioptres, or to "pebbles" having been used instead of the ordinary optical glass. When the lenses are sphero-cylindrical, the axis may be verified by putting the neutralising lenses in a trial frame, and then super-imposing the spectacles to be tested. It is to be regretted that there is no universally recognised method of denoting the direction of the axis of a cylindrical lens. An examination of a dozen different opticians' prescription forms gives five several methods. It is, therefore, well in ordering cylinders, when the axis is not horizontal or vertical, to indicate the direction by a horizontal line intersected by a dotted one at about the angle required, and having the number of degrees plainly indicated. This obviates all uncertainty as to what is required.

The next point is to ascertain whether the centres are correct. A simple plan, and one that is sufficiently accurate for all practical purposes, is to place a card, having on it two straight lines crossing each other's centre at right angles, flat upon a table. Then looking down upon it with one eye vertically over the point of intersection of the lines, hold the spectacle lens about an inch away from and in a horizontal plane parallel to, the marked card. A position will readily be found where the lens, though magnifying or diminishing the crossed lines, causes no "break" or distortion. The line of sight of the observer's eye directed to the intersection, then passes through the optical centre of the lens to be tested, and a dot of ink may be made on the glass to mark its position. Sometimes opticians having had the centre distance given them, will supply a frame the "eyes" of which do not correspond to the measurements ordered, but in order to comply with the prescription will decentre the lenses relatively to the frame, so as to make the centre distance as ordered; that is, each lens as regards its own frame is eccentric. If now these relatively decentred lenses get broken, and lenses are fitted to the frame by another optician, he supplies them with their centres coinciding with the centres of the "eye" frame, and, therefore, incorrect as regards the patient. The lenses having been examined and found correct as to their strength and centre distance, the patient may yet be wearing them in a faulty position. Slight deviations from the proper adjustment do not, as a rule, give rise to trouble when the lenses are weak; but the discomfort and irksomeness increase in proportion to the strength of the lenses, and the consequent effort on the part of the ocular muscles to maintain binocular single vision under these circumstances. More especially is this trouble apparent when the displacement of the images, caused by the patient looking

through the upper half of one glass and the lower half of the other, is vertical. When the displacement is horizontal, due to too wide or too narrow centring, the discomfort is much less, the muscles concerned being more or less accustomed to act in the way required for correcting the diplopia that would otherwise result. But we are never called upon, under normal conditions, to simultaneously depress one eye and raise the other, as has to be done to correct vertical diplopia caused as described. The improper position of the lenses may be due to the frame having become bent or twisted. To ascertain if this fault exists, lay the spectacles with side-pieces extended upon a table. If they have not undergone distortion, there will be four points of contact, namely, each "eye" and the end or corresponding points of each side-piece. If they have been bent or twisted out of shape, this will be readily perceived by the different position of the same parts.

For children the most convenient form of frame is that with bent sides with a little "play" allowed for. Adults that require to wear glasses constantly, usually find the "curled" sides the most comfortable, but they need accurate adjustment as to the spring. If the sides are too short, either the nose or ears suffer from pressure, and if too long there is a tendency for the glasses to slip down the nose. The inconvenience of having to change "distance" glasses for "reading" ones is obviated by the use of what are known as "bi-focal" lenses, which are of two kinds. In the one the lenses are separate halves and occupying the upper and lower areas of the "eye" frame; in the other the distance glass occupies the whole of the eye as an ordinary glass does, but it has a segment of another lens cemented by Canada balsam to its lower half, the combination of the two resulting in the proper strength of reading glass. For those patients who have but one effective eye, and who need different glasses for near and distant vision, a reversible X bridge frame may be ordered with the proper glasses; or an additional lens may be hinged to the shoulder of the frame, which, when not in use, folds back along the side-piece, and which is brought into position without having to take the glasses off, by a touch of the finger.

It is frequently inadvisable to prescribe the lenses which on theoretical grounds would be deemed proper. Thus full correction for adults who have never previously worn glasses, is seldom well borne, and tends to produce in many cases, giddiness, headache, diplopia, and other troubles. The various conditions and requirements of each case demand modifications in the strength of the lenses prescribed, and attention to the details just indicated will materially conduce to the comfort and well-being of the person most nearly interested—the patient.—*Treatment*, *August* 12, 1897.

91.—OPERATIVE TREATMENT OF SUPPURATIVE MIDDLE EAR DISEASE.

By William Milligan, M.D.

[The following is taken from Dr. Milligan's paper. The details of the operation and other parts have been omitted:]

Suppurative inflammatory affections of this cavity are of common occurrence, and derive their clinical importance from two facts: in the first place, from the injury which they may cause to the ear as an organ of special sense; and in the second place, from the risk that pathogenic organisms may travel from this suppurating focus to more deeply seated structures, principally towards the intracranial contents, and may there set up pathological lesions of the most serious and dangerous import.

My main reason for bringing before your notice some points connected with the operative treatment of suppurative middle ear disease, is because my daily experience teaches me that a large number of ears, and a certain number of lives, are lost simply from the fact that little or no treatment is adopted in such cases, in their early and amenable-to-treatment days, if I may use such an expression, and also because of late years great progress has been made in the management of such cases, and especially in the conduct of cases submitted to mastoid operation. I would specially draw your attention to the importance of an early ocular inspection of the membrana tympani. In such cases much, in fact, almost everything, about the attack, may be learned from such an inspection. The changes which take place in the membrane are but the reflection, the objective reflection, of what is going on within the cavity of the middle ear. The least degree of congestion of the tympanic mucosa is participated in by the vessels of the membrane itself, and can readily be seen if one takes the trouble to look. Changes of colour, from the first blush of a congestive inflammation, to the almost livid colouration and general pulsation of an intensely inflamed membrane, can be seen, and are the outward and visible signs of the same virulent inflammatory process which is going on within the cavity of the middle ear. It is at such times, and when such appearances are noted, that the surgeon should step in, and by a timely paracentesis—free and bold—relieve the tension of the part, deplete the organ locally, and so cut short the attack. It is this early paracentesis that I plead for, and, as the outcome of an experience of many hundreds of cases, have no hesitation in saying that by its timely performance much suffering is avoided, many an ear is saved, and probably many a life also.

In children, even in the youngest infants, this small surgical procedure can be safely undertaken, and its value is of almost

more importance than in adults, for the reason that in children the sutures between the different portions of the temporal bone are not properly united, and the risks of pent-up and germ-teeming intra-tympanic products reaching the intracranial cavity are much greater than amongst adults. It is probably the experience most general, that amongst children many an obscure head case has suddenly and almost instantly been relieved, by a free discharge of pus from the external auditory meatus, indicating that all the symptoms, obscure as they may have appeared, were due to nothing more than the pent-up products of inflammation within the cavity of the tympanum. I have seen many cases of what was supposed to be posterior basal meningitis relieved, and that almost immediately, by a timely paracentesis. Surely a free incision with a clean aseptic knife, is better than waiting for the rupture of the membrane, as the result of the pressure of accumulated inflammatory products; products which, by their pressure, may not only irreparably damage the delicate structures of the middle ear, but may also, and frequently do, find their way towards the cavity of the cranium, with the most disastrous consequences.

In cases of acute suppurative inflammation of the mucous membrane lining the mastoid cells, and where pus has become pent-up, with the acompanying constitutional symptoms common to pent-up pus, and with the local symptoms of pain behind the ear, swelling and œdema of the tissues over the mastoid process, and prolapse of the posterior superior meatal wall, the duty of the surgeon is clear. *Ubi pus ibi evacua* is still the motto. In such cases the original mastoid operation, as suggested by Schwartze, is *the* operation to perform, and is an operation which gives most gratifying results. At what time, at what moment in the history of the case, should an extensive mastoid operation be undertaken? Should we await the advent of pain —should we await the advent of constitutional symptoms, high temperature, rigors, irritative symptoms pointing to meningeal implication—or should we operate in the absence of all such symptoms, when we have merely an intractable chronic suppurative middle ear inflammation, with secondary bone disease present? My own experience is such as to make me more and more favour a mastoid operation in cases where, after a prolonged and conscientious trial of local measures, suppuration still persists, where we have to deal with a diseased bone situated within the depths of the mastoid process, inaccessible, and consequently unmanageable, except when freely exposed to view. I do not myself regard with any favour the awaiting the advent of pain. Too often, when severe pain comes on, we are too late; disease has obtained the upper hand, and operation is useless. In addition, many of these chronic mastoid cases are really of a tubercular nature, and run a painless

course, except when meningitis or intracranial abscess supervene. Why should the gradual disintegration of bone be allowed to proceed apace in this part of the body, when in every other region it receives the assiduous attention of the general surgeon? I maintain that a mastoid operation performed by a skilled hand, and under the conditions which all aural surgeons of the present day regard as essential, is an operation attended by extremely slight risk—risk, at all events, infinitesimally less than are the risks of the presence of suppurating bone disease in this region, with the great probability that sooner or later either systemic blood-poisoning may ensue, or some such intracranial complication as abscess, meningitis, or thrombosis.

The particular form of mastoid operation which is to be performed, is naturally a matter of much consequence, and it is in the improvement of the form and of the technique of the mastoid operation, that so much has been done of late. The operation as devised by Stacke is a great improvement upon the old Schwartze operation. A still more important modification of the original Schwartze operation, is that introduced by Drs. Panse and Körner, and known as the Panse-Körner operation. The after-treatment is in this way much simplified; the process of healing, of cuticularisation, is much more rapid than in the days of the Schwartze operation, and the results as regards the after-hearing power of the patient are frequently most gratifying. The time also during which the after-treatment has to be carried out, will be found to be of much shorter duration, a point of no small importance to the patient. The fact also that the primary incision is completely sutured at the time of the first dressing, permits of all subsequent dressings being conducted per the external meatus, so that all bandages and unsightly headgear are early done away with.—*Liverpool Medico-Chirurgical Journal, July*, 1897.

92.—EAR DISEASE IN CHILDREN.

By William Hill, M.D., B.Sc.,

Surgeon to the Aural Out-Patient Department, St. Mary's Hospital.

There is scarcely any subject more intimately connected with the health and preservation of infant life; the malady in one form or another is exceedingly common, and a knowledge of it is, if possible, even more important to the general practitioner than to the specialist, for it is continually cropping up in the practice of the former, and is but too apt to escape detection. In the patient and successful interpretation of "head symptoms" in infants by the medical attendant, there must surely lie one of

the great secrets of professional well-doing, and how often must it devolve upon him alone to relieve urgent symptoms, by performing the timely operation of paracentesis about to be referred to, and thus cut short the disease? Two papers were published in June last, by Field (*British Medical Journal*, June 12, 1897) and McBride (*Pediatrics*, June 15, 1897) respectively, calling special attention to this department of medicine. Dalby and J. H. Marsh followed with further notes on the same subject in the *British Medical Journal*, July 24, 1897. Field adds to his own observations upon acute otitis media in young infants presenting symptoms simulating meningitis, those of Drs. Cheadle, Barlow, and Lees, which were forwarded to him at his own request. From a general unanimity of opinion expressed by these physicians, we may safely infer that it is almost impossible to distinguish some cases of early posterior basic meningitis from otitis media. Fortunately, however, the establishment of a precise diagnosis is less essential than the importance of giving immediate relief to the symptoms by performing paracentesis of the drum membrane. Such signs as head retraction, fever, extreme irritability, vomiting, and even convulsions—all compatible with commencing posterior basic meningitis—have been speedily relieved by incision of both tympanic membranes. A thin muco-purulent fluid has been in such cases set free, with or without the aid of the Politzer bag (which should be always called into requisition), and complete recovery has followed. In other less fortunate instances there has been only temporary relief from the operation, the further progress of the case being marked by renewed cervical opisthotonos, tonic spasms of the limbs, cerebral effusion, and death, leaving post-mortem evidence of meningitis of the posterior base. It is the united opinion of the above authorities that many of these are cases of simple meningitis, commencing primarily by the spread of infective matter through the ear passages from the throat. A probable explanation of the readiness with which infection takes place, lies in the incomplete development of the temporal bone during the first year of life.

Symptoms pointing definitely to the ear are often slight, or absent altogether (Lees). The truth of this statement is borne out by an illustrative case in which, although no definite signs of otitis could be discovered, the symptoms were soon relieved by paracentesis of the membrana tympani. This procedure should therefore be adopted in all doubtful cases; it can do no harm in any circumstance, but if too long delayed is useless. Spontaneous discharge from the ear must never be waited for. McBride insists on the frequency with which such symptoms as those above mentioned result in the complete and persistent deafness of the child, and the establishment of deaf-mutism.

Dalby discusses the question of when to perform paracentesis in children suffering from otitis media, pointing out the difficulty of ascertaining the condition of matters in a baby's ear. He insists that the physical appearances in the membrane are usually of little help; for they are often absent, or, if present, only display a congested state of the vessels and a closed Eustachian tube. He advises that when leeches and hot fomentations fail to cut short the inflammation, a vertical incision should be made in the posterior quadrant of the membrane.

J. H. Marsh has met with cases in which the diagnosis was so wide of the mark, that the abdomen had been poulticed by the practitioner for gastro-enteritis. He gives the following early symptoms as suggesting the ear as the cause of the illness:—(1) The child constantly endeavours to rub the affected organ. (2) It utters a sharp cry of pain when pressure is made below the meatus. (3) It refuses to rest its head on the affected side. The same writer speaks highly of acetanilide in the treatment of chronic aural suppuration. Syringing first with izal lotion, and drying out with iodoform wool, he insufflates a few crytsals of acetanilide, which he finds reduces the amount of discharge, keeps the cavity sweet, and does not form an impervious crust like iodoform.

McBride, in the paper already quoted, remarks upon the reversal of conditions met with in children as compared with adults in chronic dry middle-ear catarrh. In the former, chronic middle-ear thickening with a freely pervious Eustachian tube is comparatively rare, but accompanied with obstruction of the tubes is very common. The opposite is the usual order of things in the adult. The usual text-book explanation of the origin of diffuse external otitis, is that the same causes operate in its production as in the circumscribed variety of the disease—*e.g.*, catching cold or exposure to a draught, as well as extension from disease without or within the meatus. McBride, on the contrary, thinks that the primary origin of the disease may be disregarded altogether as practically non-existent, diffuse external otitis being practically always secondary to disease in the tympanic cavity or outside the meatus. Another point alluded to in this paper is the seat of attachment of aural polypi, it being maintained that the latter rarely, if ever, grow from the walls of the meatus. The bodies mistaken for polypi thus located are usually granulations, surrounding the orifice of a fistulous track in the postero-superior wall of the meatus, and conducting to an old mastoid abscess.—*Laryngoscope, October*, 1897.

93.—NERVOUS DEAFNESS IN DIPHTHERIA.

By J. C. Wilson, M.D.,

Professor of the Practice of Medicine and of Clinical Medicine in the Jefferson Medical College, Philadelphia.

[The following is taken from Dr. Wilson's paper. The full details of the case are omitted.]

I report the following case, first, because sudden bilateral total deafness in diphtheria is exceedingly rare; secondly, because of the importance of this complication; thirdly, as illustrating the rapid disappearance of a tonsillar false membrane after the administration of an efficient dose of diphtheria antitoxin serum; and, finally, because it illustrates some phases of uncertainty in regard to the diagnosis of membranous sore throat.

Follicular tonsillitis in an adult woman, aged 33; moderate fever, occipital headache, tinnitus aurium et cerebri; fourth day, dense pellicular exudate upon tonsils, conjunctivitis, increasing tinnitus and deafness; injection of diphtheritic antitoxin serum; a few hours later, total deafness, with slight vertigo, great chemosis of the conjunctivæ; gradual defervescence, completed by the fifteenth day, at which date there was partial paralysis of accommodation, together with paresis of extensor muscles of the head, persistent tinnitus, slight vertigo, and absolute persistent loss of hearing. The patient has never had syphilis; this subject has been very carefully investigated. She is a perfectly well-balanced, reasonable woman, with a good nervous system, and has never shown the stigmata of hysteria. The possibility of hysterical deafness may be dismissed from consideration. Notwithstanding the negative report from the bacteriological laboratory, it is assumed in the title of this communication and in the discussion of the case that the disease was diphtheria. That it was clinical diphtheria is beyond question. The nature of the throat lesion, the character of the exudate developing after local lesions presenting the phenomena of lacunar tonsillitis, the rapid disappearance of the pellicle, leaving superficial erosions, after the injection of antitoxin serum, the impairment of accommodation and the double vision, together with the loss of power in the muscles of the neck, fully justify the diagnosis. Whether the bacteriological diagnosis failed because of the local treatment prior to the making of the culture, or not, cannot be known. Sudden loss of hearing occurs after mumps, epidemic spinal meningitis, and during secondary syphilis. It indicates a lesion of the eighth nerve, either in the brain or in its peripheral distribution.

Buck makes the statement that "if with the loss of the hearing there are associated the symptoms of dizziness, marked

subjective noises, and a staggering gait, the diagnosis of an auditory nerve-lesion, probably labyrinthine, may be assumed with a good deal of confidence."

Hovell states "that absolute deafness is pathognomonic of diseases of the labyrinth. It is very rarely met with, for there are few patients who are utterly unable to perceive sonorous vibrations conducted through the bones of the head." In point of fact, an examination of the literature, necessarily cursory, leads me to believe that sudden, total, permanent, bilateral deafness is extremely rare, and I have been able to find no case in which it has occurred in diphtheria. . A friend who has been kind enough to look through the entire series of the *Annales des Maladies de l' Oreille, etc.*, covering a period of twenty years, has found no such case.

Gruber quotes Moos, who reported:—"The conditions observed in the temporal bones of three children who died from simple diphtheria, and in which the middle ear exhibited merely catarrhal changes. They were similar to those found in the labyrinth by Steinbrugge in cases of epidemic cerebro-spinal meningitis. The membranous semicircular canals were in many places partially or entirely filled up by a substance consisting of coagulated lymph, and a large number of cells with one or more nuclei. The mass exhibited concentric stratification, and more or less advanced development in the direction of connective tissue, bone, and blood-vessels, and was here and there adherent to the periosteum. . . The blood-vessels were obviously congested, with rupture and extravasation of blood, thus producing breaches of continuity in the courses of the auditory nerve." Loss of the osseous substance and invasion of the cancelli of the petrous portion of the temporal bone by chains of micrococci were noted. No evidence of osseous lesions has been seen in the case that I report. With reference to the importance of total bilateral loss of hearing, as a complication of any of the acute diseases little is to be said. The remote possibility of such an accident adds greatly to the gravity of any acute disease.

It is necessary to speak definitely with reference to the administration of the diphtheria antitoxin serum in this case. This was done within a few hours of the recognition of the conditions justifying a clinical diagnosis of diphtheria. No reaction at the point of injection occurred. The temperature, which had been very low and was rising at the time of the injection, continued to rise slightly for a few hours. It is probable that the antitoxin had no effect upon the temperature whatever. The following day the general injection of the throat was less marked, and within forty-eight hours the false membrane from both tonsils had wholly disappeared, leaving superficial erosions, which rapidly underwent cicatrisation. It

is important to observe that on November 14, twenty-four hours prior to the administration of the antitoxin serum, it was noted that the hearing was already impaired, and that the patient complained of distressing tinnitus, referred to both ears and the head generally. The antitoxin serum exerted an obviously favourable influence upon the condition of the throat, but failed to arrest processes involving the labyrinth and the subconjunctival lymph-spaces that had already made some progress.—*American Journal of Medical Sciences, October*, 1897.

AFFECTIONS OF THE SKIN, &c.

94.—THE TREATMENT OF PSORIASIS.

By Norman Walker, M.D., F.R.C.P. Edin.,
Assistant Physician for Dermatology, Edinburgh Royal Infirmary.

[The following is from a clinical lecture by Dr. Walker. The treatment by internal medication, diet, etc., is omitted here. See "Synopsis."]

There are varying degrees of severity of the attack, degrees which have been honoured in the past by the addition of more or less relevant and resonant adjectives to the mother word. But they are all varieties of the same process, and personally I go further and agree with Unna, that it is impossible to draw any hard and fast line between seborrhœa, seborrhœic eczema, and psoriasis. When a patient with psoriasis consults you, almost the first thing you have to do is to examine his scalp. It is perfectly true that a very large number of cases present very typical patches on the elbows and knees, and I am aware that a great many will not agree with me when I simply state that, in my experience, the scalp is the most common seat of the disease. It is because of its all-important bearing on treatment that I lay so much stress on this. In nearly every case, then, you will find the scalp affected, and you will often find patients almost recovered from an attack, so far as concerns the body, with the disease in full swing on the scalp. Treatment is modified or suspended altogether, and then a week or two afterwards, surprise and regret are expressed at the return of the disease, which has never been removed.

Take as my first head, then, the importance, nay, the absolute necessity, of attending to the condition of the scalp. A few exceptional cases are so densely heaped up with scales, and even typical psoriasis patches—for the disease is usually present here merely as a diffuse scaliness—that free soaking with oil, or

the wearing for a night of a rubber cap, is necessary for their removal. But, in nine out of ten, or even more cases, the most suitable preliminary treatment for the head is soap—soft soap, and water. The best way to order it is in the form of Hebra's soap spirit, which consists of two parts of soft soap, and one of spirit. Bear in mind when you order it the purse of your patient, and that while one will prefer the spirit to be Eau de Cologne, another would rather pay the price of methylated spirit. It is necessary to be very precise in your directions as to its use. I have not infrequently found patients applying it to the scalp as a lotion, instead of using it as a soap and thoroughly washing out the lather. In many cases this is enough, and from a daily washing the frequency may be gradually diminished, though I by no means approve the common delusion that frequent washing of the scalp is in any way injurious. If there is much redness and irritation, the washing must be less frequent, and the scales must be softened and removed by the application of some grease. If there is much hyperæmia or irritation, a very mild application should be used—five grains of ammoniated mercury to an ounce of white vaseline to commence with, and gradually increased as the condition improves. Two other drugs of great value are sulphur and salicylic acid, which are more suitable when the irritation is not quite so severe, and should be used in a strength of from ten to thirty grains to the ounce, either together or separately. After the disease has apparently disappeared, the washing should still be kept up twice a week, and the following used as a hair wash:—℞. Ac. salicyl., ʒi.; ol. ricini, ʒii.; ol. ros. geran., ♏10; sp. vin. rect., ad. ʒvi. This should be poured into the hollow of the hand, mopped on the head, and thoroughly brushed in with a pair of brushes. If this treatment is carried on religiously for months, and the body eruption got rid of—as can so easily and certainly be done—the recurrence of the disease will certainly be for some time postponed. When the body is affected, we must, in regard to treatment, consider the different varieties, not under their different adjectives, but according as the spots are numerous or few, acute and hyperæmic, or paler and more chronic.

In all cases bathing is desirable, in the widespread cases essential. The patient should soak for from ten to thirty minutes or more in a warm bath, and during the bath should employ himself with a nail brush and soft soap in removing the scales from the patches. When the spots are few, and not inflamed, a simple, cleanly, and fairly efficient remedy is chrysarobin traumaticin or tar collodion; the latter made with acetone and gun cotton—twenty grains to the ounce. The strength of the active ingredients should be about a drachm to the ounce. Another method which I have found useful in such

cases, as well as in more widespread ones, is the use of an ichthyol tar soap, the patient lathering the parts freely before going to bed, and sleeping in a woollen nightdress. When the attack is more general, several factors come into consideration. If the patient be anxious to get rid of his disease rapidly, there is no treatment so efficacious as that of chrysarobin. The formula I generally use is Unna's compound chrysarobin ointment:—℞. Chrysarobin, 5 parts; salicylic acid, 2 parts; ichthyol, 3 parts; vaseline, 90 parts. This should be well rubbed in, after the bath, twice daily. It must, of course, be borne in mind that permanent injury to the clothing is done, and many amusing experiences have resulted from the neglect of proper precautions. The ointment should not be applied to the head or face, for conjunctivitis is readily set up. Even when not applied directly, conjunctivitis may occur. For some time I was very much annoyed by all my cases in hospital becoming affected with this complication, which did not disappear until a fresh sample of the drug was procured. In cases where it occurs, it will therefore be well to alter the source of the drug. This treatment, though efficient, has the disadvantage that the patient has practically to give himself entirely up to it, and milder methods must be used where this is impossible. The safest treatment is tar. After the nightly bath, the spots must be painted either with pure liquor picis or with a strong spirituous solution. The remains of the tar can be washed off in the morning bath, and some mild colourless ointment applied, such as the ammoniated mercury, preferably diluted. Another treatment which is cleanly and not so unsightly as the tar is that by salicylic vaseline, the proportion varying from ten grains to a dram, to the ounce.

When the attack is very acute and the spots irritable and tending readily to moisture, milder treatment should be used. Hebra's ointment, composed of equal parts of lead plaster and vaseline, or the zinc ointment of our pharmacopœia, will certainly do less harm than the more irritating applications which are often ordered in wholesale manner. I wish specially to impress upon you this fact, that it is not sufficient to diagnose psoriasis, and then look up some book and get a prescription for that disease. You must pay attention to the condition, variety, and form of the attack. The same advice about mild treatment applies to many cases of the more chronic variety, where large areas of the skin are affected. For the persistent application to these of the irritant class of remedies often transfers them from the category of psoriasis into the other and more serious one of exfoliative dermatitis. In both cases, when the acuteness of the eruption has disappeared, treatment may follow the lines indicated in the non-irritated form.—*Quarterly Medical Journal, July*, 1897.

95.—THE TREATMENT OF LUPUS.

By Balmanno Squire, M.B. Lond.,

Surgeon to the British Hospital for Diseases of the Skin, King's Cross, London.

The author describes a new mode of treating lupus. This is an endeavour to improve on the methods devised by Professor Volkmann, of Halle, for the treatment of this disease. Volkmann's methods were of two kinds: the one was the scraping out of the soft and friable new formation by means of comparatively sharp spoons; the other was the execution of a multiplicity of closely placed but shallow punctures, made with the point of a lancet, this latter process being designed for the treatment of such portions of the diseased area as are not sufficiently soft and friable to yield readily to scraping. Mr. Squire states that these methods, although always leading to rapid and considerable temporary improvement, never induce a complete arrest of the progress of the disease. After reviewing various other methods of treatment, such as excision, the actual cautery, the thermo-cautery, chemical caustics, and the various modifications of puncturation, and explaining what he regards as prohibitive disadvantages in the case of each of these, he assigns reasons for objecting also to the administration of either chloroform or ether in operating on lupus. He accordingly avails himself of local anæsthesia, namely, by freezing the affected area by means of Richardson's apparatus. This preliminary is indeed an essential condition, in more ways than one, of the method which Mr. Squire has devised, since for the performance of his operation a glacial state of the affected area is indispensable. In this state, as he finds, the skin can be carved, or, as he expresses it "sculped," with the same ease as if it were moderately hardened putty, and the diseased structure can thus be brought away in solid chips. For executing the "sculping" he uses a modification of Volkmann's steel spoons, that is to say, spoons of about one-fourth the size of Volkmann's, and having much sharper edges. In the glacial state, sound skin and diseased skin comes away with equal facility under the action of these spoons. Accordingly, Mr. Squire finds himself able by means of them to remove not only the soft and friable tissue, which alone comes away under the customary method of scraping as devised by Volkmann, but also the whole of such tougher portions of skin as are in a less degree affected with lupus. But not only is he able thus to remove the whole of the area which may be in any degree diseased, but also a zone of apparently perfectly healthy skin. The last he considers it specially necessary to remove, since he holds that the real limits of a lupus patch extend for some little distance beyond its

visible limits. He claims for his operation not only that it is more thorough, but also that much more precision can be imparted to it, than is possible in the operation of "scraping." He describes his operation as a "specially conservative excision of lupus, executed not with a knife, but with a curette, and performed under conditions which admit of more than customary precision." A necessary feature of this method is that the limits of the patch to be "sculped," must be previously carefully marked out with a black line drawn round it on the skin. This is requisite, because when the skin is frozen, the lupus-patch and the skin around it are alike of a uniform dull white colour, so that all trace of the margin of the patch disappears for the time being.

Mr. Squire draws attention to the fact that the operation he has devised is essentially different from Volkmann's operation (scraping) not only in detail but in scope. He claims other advantages than those above referred to as incidental to operating on skin in the glacial state. One of these is that not a single drop of blood escapes to embarrass the operator; this he regards as an important factor in an operation which, from his point of view, demands considerable precision for the attainment of a successful issue. Another is that in the glacial state the skin is absolutely rigid. In Mr. Squire's view this circumstance is a notable additional aid to the attainment of precision. In the operation of scraping, as ordinarily performed, an embarrassment arises from the ready yielding of the skin in whatever direction the curette may at the moment be pressed. "The considerable elasticity of the skin and its loose attachment to subadjacent structures, renders the 'scraping' of a lupus patch, as ordinarily performed, a very imperfect procedure; whereas the frozen skin around the frozen patch, fixes the patch all round as firmly as a drum fixes a drum head. Another advantage claimed is that the frozen skin does not clog the curette."

After thus thoroughly carving out from the frozen skin all of the diseased structure, so far as ascertainable, Mr. Squire "still further safeguards" the efficacy of his operation, by "linearly scarifying" the floor and margin of the sculped-out area, at a subsequent sitting, by means of his "multiple lineal scarifier." This is an instrument composed of sixteen parallel scalpel-blades fixed on one handle, the cutting edge of each blade being separated from that of its neighbour by an interval of only a thirty-second of an inch. For this operation the area is again frozen as before. He says:—"By such means I have succeeded in completely healing very many cases of lupus, in such wise that the patients have remained absolutely free from the disease for a series of years." In conclusion, he desires to say that he has acquired practical experience of a great many modes

of treating lupus, but no method that he has tried has yielded him results so good as the one he has here described.—*Therapeutic Gazette*, 1897, p. 509.

96.—SIX CASES OF LUPUS VULGARIS TREATED BY KOCH'S NEW TUBERCULIN.

By Malcolm Morris, F.R.C.S. Edin.,
Surgeon, Skin Department, St. Mary's Hospital;
and
Arthur Whitfield, M.D. Lond., M.R.C.P.,
Assistant Physician, West London Hospital.

[The details of the cases and other parts of the paper have had to be omitted here:]

Koch lays stress on the following points:—Begin with a small dose ($\frac{1}{500}$ mg.). Raise the dose as rapidly as possible, taking care not to excite constitutional reaction. Never give a second dose until the temperature has fallen to the normal point or near it. Koch thinks immunity commences one or two weeks after the injection of the larger doses (0·5—1 mg.). Of six cases, the improvement in one or two, and those the worst of them, is so remarkable, that the necessarily bald clinical record fails to convey an adequate idea of the change that has been wrought in the appearance of the affected parts; to be fully appreciated it must be seen.

Summarising the effects of the new tuberculin in the order in which they were observed, there was:—(1) A diminution of the surrounding halo of redness in those cases in which this had been present to a marked degree, before the commencement of the treatment; in cases in which there were simply yellowish brown nodules in a white scar, the injections produced no visible effect at this stage. (2) The next change noticed was a slight depression in the centre of the nodules, leading to wrinkling, and later to desquamation of the cuticle. Then there occurred (3) steady healing of all ulcerated surfaces; and (4) slow subsidence of the previously permanent œdema of the lips, ears, &c. In two cases actual disappearance of the characteristic lupus nodules was observed, in the former on the upper lip, in the latter on the eyelid. In other cases there was distinct shrinking of nodules, with diminution in the scaling of the surface. Another marked effect of the injections was the softening and flattening of pre-existing scars. In no case has there been the slightest sign of progress in the disease since the treatment was begun. This fact is especially noteworthy in regard to one of the cases, which had previously shown a very

marked and ever-increasing tendency to recurrence and extension under so many forms of treatment.

As regards the immediate effect of the injections, there is at first little or no reaction, although in some cases a feeling of heaviness and drowsiness is complained of. When the larger doses are reached, there is considerable febrile disturbance, sometimes with headache and pains in the limbs, and even some trouble in breathing, and a general feeling of depression, with broken sleep. Locally the erythema is generally increased, and the whole affected area, including even old-standing cicatricial tissue, is swollen. In two of our cases, however, in which there were sound scars, probably from previous lupus, no reaction was observed in the scar. The phenomena of reaction quickly disappear, and then the patients without exception describe themselves as feeling better than they did before. As showing how slight, comparatively, is the general reaction following the use of the new tuberculin, it may be pointed out that in two cases the patients are going about, and only come to the hospital from time to time, to have the treatment applied. We do not, however, think this course advisable as a rule.

On the whole, we are able to state that the local effects of the new tuberculin, in the cases of lupus vulgaris in which we have tried it, have been uniformly good, in some cases distinctly brilliant. The constitutional disturbance has in no case been severe, and has always been of a very transitory character. As far as can be judged at present, the injections do no harm whatever. We think it well, however, to repeat most emphatically that we do not claim the results here reported as "cures." We have recorded as faithfully as we could, what we have seen in a small number of cases; time alone can show whether the great improvement that has taken place in the appearances of the disease in these cases will be lasting. The present must be taken strictly as only a preliminary note, written in compliance with a request from the editor of the *British Medical Journal*. A full report of the cases, with their subsequent history in detail, will be given to the profession later.

We may say, in conclusion, that, without committing ourselves to a definite judgment as to the value of this new remedy, we should have no hesitation in recommending it in any case of lupus vulgaris, in which the constitution is not hopelessly broken down. In recommending it, we should be careful to warn the patient that he must not look for any miraculous effect. It is clear that a sufficient length of time must be allowed for the operation of the remedy, if it is to be effectual; how long that may be it is impossible to say at present. As regards the production of the immunity aimed at by Koch, that is obviously a very difficult matter to test in the human subject. Finally,

we may be allowed to express the hope that the new tuberculin may soon be made more easy to procure, and less costly than it is at present.—*British Medical Journal, July* 24, 1897.

97.—THE ACTION OF THYROID EXTRACT ON THE SKIN AS ILLUSTRATED IN CASES OF ICHTHYOSIS.

By Wm. Walton Don, M.D., West Hampstead.

The following illustrates the general action of thyroid extract on cutaneous surfaces, and, at the same time, shows its special remedial effects in ichthyotic conditions. In chronic skin diseases, in which the extract has been given with good effect, the question is still open whether its use can be approved of as a routine treatment, for it still remains to be demonstrated whether the continued use of the remedy in such diseases would not ultimately prove injurious to the general health. The rapid pulse which the internal administration of thyroid extract always induces must, I think, in the end prove hurtful to the cardiac function, and therefore its too prolonged use is probably to be deprecated. Its remedial effect in skin diseases appears to result from increasing the cutaneous vascularity, thereby stimulating dermal nutrition, and also through diaphoresis getting rid of effete material. Certainly this action on the skin is always assisted by external stimulant applications, such as baths and inunctions. The action of thyroid extract in ichthyosis seems to be so beneficial, that if any constitutional treatment in that disease is attempted, it should be given a fair trial. It does not seem to have been much employed in ichthyosis, which is the more remarkable when its peculiar action on the skin is considered. In both of my cases the results were temporarily excellent, but on leaving off the remedy, the diseased condition of the skin showed liability to return.

I have found in administering the extract to patients, that they display tolerance of a considerably greater dose after its administration has been continued for some time, and in this fact apparently lies the best chance of successful treatment, because with a continued limited dose only a certain point is reached, beyond which no visible improvement apparently results, but on increasing the dose (provided the patient can bear it) improvement, if it is going to take place at all, very shortly appears. The form in which I have given the remedy was Messrs. Burroughs and Wellcome's 5-grain tabloids, commencing with one tabloid, and after three or four days increasing to three or five daily, according to the effect on the

patient. At the same time I gave a cardiac tonic, containing nux vomica and digitalis at the commencement of the treatment. [The details of the author's two cases are omitted.]

From the various cases in which I have given thyroid extract, and from a careful scrutiny of the bibliography of the subject, I have come to the following conclusions regarding its action on the skin. There is no doubt it is strongly stimulating, by directly increasing the cutaneous circulation, as evidenced in sensations of flushing, hot tingling, and congestive irritation, such as is felt preceding ordinary perspiration. The increased cutaneous vascular supply apparently results in:—(1) Increased nutrition of the skin, hence its probable remedial action in ichthyotic conditions, an effect produced without any necessarily abnormal perspiration; (2) increased action of the cutaneous glands accelerating excretion of waste products, thus keeping the surface in a supple condition; (3) regrowth of hair, as shown in myxœdema and some cases of general alopecia; (4) increased activity of the epidermal layers, causing desquamation of unhealthy epidermis and reproduction of a new covering, as observed in ichthyosis, psoriasis, dry chronic eczema, and also in some cases of myxœdema and cretinism. Among its general effects, I have found that in doses of 15 gr. daily it causes a pulse-rate of 120 to 140 per minute, which in different subjects may be either of high or low tension. But thyroid extract seems also to rapidly exhaust latent cardiac energy, for if the dose be unduly increased, or if the patient is not fully accustomed to it, then the heart soon tires, and the pulse, although still quick, is weakened so as to induce irritability, depression, and tendency to syncope. It is difficult to say whether increased excretory action be due to direct irritation of the secreting glands, or from general increased blood pressure; possibly it arises from both.

In neither of my two cases did the temperature rise high; there was, indeed, a slight rise at the commencement of the treatment, but none in its later stages, although the remedy was given in larger doses, a result probably due to increased metabolism of the tissues, plus insufficient surface cooling, from the skin not acting in a normal manner, for when the skin became healthier there was no appreciable thermometric rise. The action of thyroid extract on the nervous system in most of my cases has been depressing, patients complaining of feeling debilitated and low; but in a case of myxœdema in which I used it, its action was the very opposite. In my cases the results are, I think, sufficiently encouraging to warrant a more extensive trial in ichthyosis, which has hitherto proved so intractable to treatment.—*British Medical Journal, November* 6, 1897.

98.—THE HYSTERICAL NEUROSES OF THE SKIN.

By Arthur Van Harlingen, M.D., of Philadelphia.

[The following is from Dr. Harlingen's paper:]

The chief affections of the skin which have been described as occurring in the course of hysteria are the following:—Erythema, dermatitis, urticaria (including dermographism), hyperidrosis, œdema, urticaria bullosum, pemphigus, herpes zoster, eczema, gangrene, pigmentation, vitiligo, lichen, chromidrosis, ecchymosis, hæmatidrosis. A brief description of some of the more salient characteristics of these affections is all that I shall give at the present time.

Erythema is one of the commoner forms of hysterical neurosis of the skin. It may form the origin or base of several other forms of eruption. The eruption of hysterical erythema presents in general nothing to distinguish it from the ordinary erythemata. In many cases, however, it tends to develop and change its character into that of a dermatitis, an urticaria, a purpura, or a gangrene.

Urticaria is one of the more usual forms of eruption met with in the hysterical condition, and is, in fact, the first symptom of many of the other skin-lesions into which it develops. When simple and uncomplicated it does not differ greatly from ordinary urticaria in appearance. Sometimes a violent emotion, as anger, or a nervous shock, as in a railroad accident, may lead to an outbreak of the eruption. Closely allied to urticaria is the peculiar condition named by Barthelemy, in his admirable monograph upon the subject, dermographism, but also known as autographism, factitious urticaria, &c.

Hyperidrosis is one of the symptoms of hysteria which has been known longest. Sydenham notes it as regards nocturnal sweating. The hyperidrosis of hysteria may be general or partial. When partial it is frequently superposed on other hysterical symptoms, being limited, for example, to the side affected in hemianæsthesia. In a case noted by Martin, night sweats were present; but while the paralysed side, which was atrophied, secreted only slightly, the unaffected side was streaming with perspiration.

Œdema is a very interesting symptom of hysteria. It has been described by Weir Mitchell, Charcot, and more recently by many others, and I shall not here dwell upon it at any length. It usually occurs in connection with other hysterical symptoms, as arthralgia, paralysis, or contraction. It is most commonly unilateral, although exceptions have been noted to this rule, and a generalised form has been described. The appearance of the integument which may happen to be the seat of hysterical œdema varies. The colour may be white, as in ordinary dropsies; rose coloured, or red; but most frequently it is bluish

or violaceous. The colour usually remains the same in a given individual, whatever point may be attacked, and in successive attacks. Hysterical œdema is always hard; the pressure of the finger makes little or no impression. Punctures do not give exit to serum. Gilles de la Tourette says that it is a regular œdema invading the entire circumference of the member. There are exceptions to this, however. In one case a tumour the size of an egg, of a violaceous rose colour, was found seated near the external malleolus of the left leg. Such cases, excepting where the history is clear, are with difficulty distinguished from the cases of so-called giant urticaria and acute circumscribed cutaneous œdema. On palpation the sensation given by hysterical œdema varies. The temperature of the surface may be normal, or in blue œdema it may be diminished, while in rose-coloured or red œdema it may be increased. In one case of œdema of the wrist, hand, and fingers, the surface was 10° to 12° C. less than on the affected side. In such marked cases the skin is cold and dry, the colour blue with violaceous marblings, and it may become almost black in colour. Sometimes the general tint may be rose-coloured or red, the surface shining as in articular rheumatism, and giving the impression of an elevation of temperature, which may indeed be present to the extent of 1° to 2° C. Hysterical œdema, whatever form it may take, is almost always accompanied by sensory troubles, often to a marked degree. Charcot has observed thermoanæsthesia. The course of hysterical œdema is variable. It appears with or preceding the contracture or paralysis, becomes established with the motor troubles, and undergoes frequent changes of increase and diminution. The latter is highly characteristic. The œdema increases or decreases under the influence of the appearance or disappearance of the menses, of strong emotion, &c. The duration of the affection is very variable. It may last as long as two or even five years. Its gravity is measured by that of the accompanying general symptoms. The diagnosis of hytserical œdema when this occurs in connection with other well-marked hysterical symptoms is usually not difficult. When the œdema is rose-coloured and coexists with an arthralgia, rheumatism is suggested. Brodie has noted, however, that the œdema is not exactly limited to the painful joint, but has a strong tendency to become diffused over the entire member and even in localities where the articulations are unaffected. In addition there is no fever in connection with the hysterical affection. Nevertheless, it has sometimes been taken for rheumatism. In other cases, hysterical œdema has been mistaken for phlegmasia alba dolens, periostitis, syringomyelia, and Raynaud's disease. As regards the latter, similar symptoms sometimes occur in connection with hysteria.

Pemphigus.—This form of hysterical dermatoneurosis has long been recognised, and the term "pemphigus hystericus" is familiar. The eruption takes on various aspects. The lesions may consist of phlyctenulæ, or of larger blebs, and it may occur alone, the bullæ rising directly from the skin without any perceptible base or areola, or they may develop from erythematous or urticarial patches. Their most frequent seat is upon the limbs, although any portion of the body may be attacked. The lesions may be filled with serum, with serosanguinolent fluid, or, in rare cases, they may be semipurulent or purulent. Commonly the individual lesions run a rapid course, but the eruption is kept up by repeated outbreaks. Not infrequently each outbreak is connected with an hysterical attack, or in women with the recurrence of the menstrual period. The bullæ of hysterical pemphigus may dry up and leave crusts which fall off without being followed by any mark, a pigment-stain may be left behind, or an ulcer may form at the base of the lesion, and, healing, leave a keloidal scar.

Herpes zoster.—I am not sure that herpes zoster should be included among the hysterical neuroses.

Eczema.—It is a question, in my mind, whether the lesions described as hysterical eczema should not rather be included under the head of dermatitis.

Gangrene.—The occurrence of gangrene in connection with hysteria is not, comparatively speaking, uncommon. It may occur in several different forms, and is usually preceded by certain subjective symptoms, as tingling, itching, or darting pain. The earliest lesion is at times an erythematous blush, or a papule; at other times an urticarial wheal, and occasionally a bulla. On the basis of this preliminary lesion a point or patch of necrosis forms, sometimes as a black eschar, at other times as a parchment-like induration, accompanied in some cases with a slight purpuric effusion. The eschar separates, leaving an ulcer, which may be extremely superficial and followed on healing by only a slight pigmentation, or which may be deeper and followed by a keloidal scar. Any of the other lesions of hysteria on the skin may develop into gangrene. The so-called "herpes gangrenosus" of hysteria has nothing herpetic about it, but is a simple multiple gangrene. The lesions of hysterical gangrene of the skin may be single or very numerous, and vary in size from a pin-head to that of the palm of the hand. Any portion of the body may be attacked. Several cases have been reported where gangrene has occurred following injuries to the skin, as burns, pricking the fingers with needles, &c., so that the question as to whether a transmitted neuritis or some reflex effect might not be involved. Such, however, is not considered likely.

Lichen planus.—But few cases of lichen planus have been reported in connection with hysteria, and these are not altogether convincing as regards their true etiology.

Chromidrosis.—Hysterical chromidrosis is usually black or blue. The symptoms are as follows:—Without an appreciable cause, or more frequently under the influence of some menstrual disturbance, moral emotion, or intense heat, the lower eyelids, more frequently attacked than other regions, become swollen, congested, and painful, while a blackish or bluish patch of variable area shows itself, which at first is rather light in tint, but soon becomes darker, and spreads over the entire surface of the lid. In some cases the affection goes no further, but in many instances the cheeks and forehead, particularly the edge of the scalp, the nostrils, lips, ears, &c., may be invaded, and occasionally, as in Billard's case, described above, a considerable part of the surface may be invaded. The appearances presented by the patches of disease are variously described.

Purpura.—Ecchymosis.—Hysterical ecchymoses are usually found in connection with purpura and hæmatidrosis. They may occur separately, however, and are probably far more common than the number of reported cases would seem to indicate.

Hæmatidrosis.—Hæmatidrosis, or bloody sweat, is one of the most striking manifestations of hysterical dermatoneurosis. Since the appearance of Parrot's monograph this infection has been regarded as a neuropathic hemorrhage, and the cases which have been published from time to time when collated are found to be strictly dependent upon the hysterical condition.—*American Journal of the Medical Sciences, July*, 1897.

Obstetrics and Gynæcology.

99.—DRUGS WHICH SHOULD NOT BE EMPLOYED DURING PREGNANCY.

By M. Boissard.

In an article on this subject, in the *Journal des Praticiens*, for August 28, M. Boissard remarks that in a general way all therapeutical intervention should be incriminated when it is followed by abortion or premature labour. Emmenagogues, he thinks, should be banished from the treatment, not only of pregnant women, but in the case of those in whom there is a suspicion of the possibility of the beginning of pregnancy. According to him, there are no abortive drugs, in the strict sense of the word, but there are drugs which, given in toxic doses, may cause at the same time both abortion and the death of the woman; these drugs are therefore useless and inefficacious, and there is danger of poisoning to the woman. With regard to the ecbolic and oxytocic drugs, they belong to another class, and have the property of arousing and aiding the progress of uterine contractility, or of strengthening the intensity of the urine contractions after they have been aroused; the action of the latter is certain, that of the former doubtful. The action of quinine sulphate and of sodium salicylate is not to provoke abortion or premature labour, says M. Boissard; that would be very much to be regretted, as obstetrical therapeutics would be deprived of two valuable drugs. Drugs that have that property may, however, be advantageously employed in cases of contraction of the pelvis, in which it is expressly indicated to interrupt the course of pregnancy. The abortive or ecbolic action of quinine sulphate, says the author, has been discussed by many writers whose investigations and experiments show that this drug should not be considered as an abortive agent; in several cases in which there was contraction of the pelvis, and it was necessary to interrupt the pregnancy, this drug was given every day in large doses without producing the least symptom of labour, yet it was given in amounts that, if not toxic, were at least sufficient to cause quinine intoxication. M. Boissard thinks there should be no hesitation in employing quinine sulphate during pregnancy, whenever symptoms of malarial infection manifest themselves, and these cases are rather frequent, pregnancy serving to arouse in some way the previously dormant infection. It is the same with sodium salicylate; only ergot, because of its oxytocic properties, should

be rejected, even in cases of hemorrhages during pregnancy, in order not to cause tetanisation of the uterine fibres.

Narcotic, analgetic, or anæsthetic drugs may be administered without fear when their employment is justified, and may be of great benefit to the parturient woman. The different preparations of belladonna and of stramonium may be employed, also antipyrine, opium, chloral, and chloroform, or ether. In case of threatening abortion, laudanum is admirably borne, and as much as a hundred drops, in enemata of boiled water, may be given during the twenty-four hours, twenty-five drops at a time being the amount used. It is the same also of chloral in vomiting, and of chloroform, which is employed during pregnancy to clear up the diagnosis and ascertain the exact configuration of the pelvic cavity, in order to reduce retroversion of the gravid uterus, and to facilitate version by external means. The different mercurial preparations, continues M. Boissard, are administered, not only in cases of acknowledged syphilis, but also in doubtful and unacknowledged cases, when the physician finds himself in the presence of a series of abortions or premature births of macerated infants.

Concerning the administration of purgatives, M. Boissard says that, under the pretext that, in the beginning of pregnancy, it is dangerous to use purgatives, some women reach an extraordinary condition of constipation which is much graver than the possibility of the danger they fear.

With regard to bathing, this favours the functions of all the organs, and particularly of the skin, and pregnant women may and should take baths during pregnancy, one every fifteen or twenty days at the least, observing the following precautions:—Not to bathe at a time corresponding to the last appearance of menstruation; not to allow the temperature of the bath to be above 96·4° F.; not to remain in the bath longer than fifteen minutes, and to guard against taking cold on coming out of it.

Concerning vaginal injections, the author is in favour of their general use, and thinks the necessity of their employment should be explained to women. Some precautions are given in regard to their use, and the author adds that, if they are observed, accidents resulting from the action of the hot water on the uterine fibres will be avoided, also any traumatism to the neck of the uterus.—*New York Medical Journal, September* 25, 1897.

100.—THE USE AND ABUSE OF ERGOT IN OBSTETRICS.

By Thos. More Madden, M.D., M.R.C.P.I., F.R.C.S.E.
Obstetric Physician to the Mater Misericordia Hospital, &c.

[The following abstract of Dr. Madden's paper appeared in the *Medical Press and Circular*, June 2, 1897:]

The reaction against the former abuse of ergot in obstetrics has apparently been now carried to an extreme and undue extent, and has led to its desuetude in many instances wherein this ecbolic might be most advantageously employed. I therefore submit some observations with regard to the circumstances under which long clinical experience has convinced me that ergot, or its preparations, may and should be given in midwifery practice, and the methods of its administration, together with a summary of the results, to mother and child, in 150 of the instances in which, in my practice, this drug was resorted to.

Circumstances under which Ergot may be employed in Midwifery Cases.—Judging from the recent literature of this subject, it may not be superfluous to premise that to use ergot or any of its preparations safely and effectively during parturition, the presentation should, as a rule, be cranial; that there should be no disproportion between the fœtus and the maternal parts, nor any obstacle to deliverance in the genital tract; that the os uteri, if not previously fully dilated, should at least be sufficiently dilatable to allow speedy delivery by the forceps whenever that may become necessary; and, finally, that a preparation of ergot should be selected, and a dose given calculated to produce the required ecbolic effect. Under such conditions ergot may be given with utility when required either before, during, or after the second stage of labour, viz.:—(1) in some instances (*a*) of delay from inertia of the uterus before the full dilatation of a dilatable os, and in which there is any evident danger to either mother or child from protraction of labour; (2) it may be administered during the second stage (*b*) in nearly every case of long delay from inertia wherein the presentation is natural and the delivery not otherwise impeded, or in which (*c*) there is then either reason to apprehend the probability of subsequent hemorrhage, or any other such complication as may call for its use; (3) during the last stage of labour this ecbolic may be employed (*d*) to hasten the expulsion of the placenta when delayed by inertia, or (*e*) for the arrest of hemorrhage; (4) after labour ergot may be resorted to either immediately (*f*) to prevent or check flooding, or subsequently (*g*) to produce such tonic or permanent contraction as will effectually seal up the uterine vessels, and so lessen the liability to subsequent septic invasion, or (*h*) to effect the expulsion of clots, and so arrest after-pains; (5) and lastly (*i*), to stimulate such contraction as may quicken or secure the process of involution after parturition.

Method of employing Ergot.—In such cases this ecbolic, if given at all (and whether ergot, ergotine, ergol, or any other of its preparations be selected), should be employed not in the repeated small and utterly insufficient quantities that have been recommended by some modern writers, but should be

administered only once during labour, and then in such a bold, full, and effective dosage as may be likely to excite speedy and permanent or tonic uterine contractibility. With this view, in my own practice, I generally use the fresh liquid extract of ergot of the Pharmacopœia, of which I commonly give a couple of drachms, or in some cases three drachms, by the mouth, together with a drachm by deep hyperdermic injection in the gluteal region at the same time.

Abstract of 150 Obstetric Cases in which Ergot was employed.—In 70 of these cases the patients were primiparæ; in 80 they were multiparæ. In 148 instances the result was favourable to the mother. In 95 of the cases referred to, the drug was given before the birth of the child—viz., in 15 for delay from inertia in the first stage of labour, the os being previously dilatable, and the head presenting; and in 80 either for delay similarly occasioned in the second stage, or else then for the prevention of hemorrhage, or for other complications. In 92 of these instances the children were delivered alive, either by uterine action or by the forceps. Of the 95 cases in which ergot was given before the birth of the child, in 86 the placenta was normally expelled, and in nine its removal had to be assisted for morbid adhesions or other causes, one only of which was a case of hour-glass contraction. In 55 cases the ergot was given after the birth of the child—viz., in 25 during the third stage, to hasten expulsion of placenta or to prevent hemorrhage; and in 30 after delivery, for the arrest of post-partum flooding, or for some other reasons to stimulate and secure the permanent, or tonic, contraction of the uterus. My experience, as here summarised, points to the conclusion that the dangers which are now so commonly ascribed to the use of ergot in obstetrics, are probably largely attributable to its misuse, or administration in unsuitable cases, or in insufficient doses, and therefore furnish no argument whatever against its judicious and proper employment.

101.—IS ROUTINE UTERINE OR VAGINAL SYRINGING NECESSARY AFTER PARTURITION?

By Peter Horrocks, M.D., F.R.C.P.,
Assistant Obstetric Physician to Guy's Hospital.

[The following is from Dr. Horrocks's paper:]

Having a strong belief myself that in most cases routine syringing is not required, and in some cases it is injurious, I have been led to put down on paper my reasons for not advocating or practising routine syringing. One of the most powerful arguments in favour of routine vaginal syringing

after labour, is found in the fact that puerperal fever has been almost, if not quite, eliminated from some of the lying-in hospitals since the adoption of this method; whereas formerly it is well known that these institutions had to be closed occasionally owing to an outbreak of a fatal form of puerperal fever. Hence came the very obvious, but not strictly logical conclusion, that the vaginal syringing was the main, if not the entire, cause of the disappearance of this dread disease. Moreover, additional weight was given to the belief, when it was shown that it was not until a solution of perchloride of mercury had been substituted for other supposed less potent germicides, that the best results were obtained. The physicians, acting on this belief, naturally urged upon all nurses the vital importance of carrying out this apparently beneficent measure. But a little further consideration will show that it was not necessarily the vaginal syringing that prevented puerperal fever, and indeed, in all probability, it was prevented already by other means, so that the syringing was *de trop*, and need not have been carried out. For it must be remembered that, along with this result, other results of the antiseptic principles were being arrived at, made known, and carried out—namely, the importance of washing the hands and instruments, and seeing to the cleanliness of the genitals and the patient's surroundings: in other words, the attainment of asepsis; and it is to this, I think, must be attributed the elimination of puerperal fever from the lying-in hospitals, and its great diminution wherever the principles of asepsis have been adopted.

It had been known, long before the days of antiseptics, that certain accoucheurs were extremely unfortunate in that every now and then cases of fatal puerperal fever occurred in their practice, while neighbouring practitioners were quite free from such results. In the light of to-day's knowledge, we see the finger of science pointing to the hands of those unfortunate accoucheurs, and it is appalling when one considers how many lives have been sacrificed by want of cleanliness, such as we understand it now. There are practitioners who, in the course of a long life and busy practice, never had a fatal case of puerperal fever, and yet they never adopted routine vaginal syringing, nor did they know anything about the theory of antiseptics—at all events in their younger days. How, then, have they obtained such excellent results? Good luck, some might say; but is it not much more probable that such doctors were personally scrupulously clean, and that they attained asepsis without knowing it? When a case of puerperal fever occurs, it does not follow that the accoucheur is the cause, although he may be and yet be unaware of it. Now, if an accoucheur can attend some 3,000 cases without a death from puerperal fever, and without using routine vaginal syringing, it

goes a long way towards proving that such syringing is not an essential element of success.

In the Guy's Hospital Lying-in Charity, which at present is entirely external, the students attend poor women in the immediate neighbourhood of the hospital, and the mortality from puerperal fever during the past few years has been very low, although routine vaginal syringing is not practised. The students, however, are provided with a solution of perchloride of mercury, and they are strongly urged never to make a vaginal examination without first washing their hands, and placing them in a solution of perchloride (1 in 1,000) I believe that this is loyally carried out. During 1891 they attended 2,964 cases. There were only two deaths that could be in any way attributed to septic influence. One of these died on the third day of the puerperium, from malignant scarlet fever. The other died on the sixth day, after an abortion. She had suppurative peritonitis. In 1892 they attended 3,044 cases with two deaths from septic causes. One of them died on the fourth day from puerperal septicæmia (peritonitis, scanty milk, and lochia). The other died on the thirteenth day; she had phlegmasia dolens and septicæmia. In 1893 they attended 3,089 cases with two deaths from septic poisoning. One died on the seventh day, and the other on the ninth day, from puerperal septicæmia. So that in 9,097 confinements, in one of the lowest and poorest quarters in London, with bad hygienic surroundings, we get a mortality from septicæmia of ·06 per cent. If routine vaginal syringing had been employed, it would have been superfluous and unnecessary in 9,087 out of the 9,097 cases. And in a better class of practice, where cleanliness and good hygienic surroundings can be obtained, I think this very low mortality can be still further diminished.

Now, it might be argued that, had routine vaginal syringing been employed, even this low mortality might have been eliminated. It must, however, be remembered that these cases have not all the advantages of an aseptic system such as obtains in a modern lying-in hospital. Frequently enough the child is born before the arrival of the extern, and the woman has been assisted by the kindly meant help of a neighbour. Hence the mischief is already done, and it is questionable whether in such a case syringing would prevent it. Still, even if it would, that would not affect the question of routine syringing, but would only mean that syringing should be done if a woman has been delivered without the usual aseptic precautions.

But one must look at the matter from another point of view. Is there no danger arising from vaginal syringing? Is it not possible to introduce, by means of the syringe, the very poison that we are trying to kill? Is it possible to be absolutely sure of the asepsis of the syringe and the fluid injected? My

experience is that there is a certain amount of danger in routine syringing. Nurses cannot always be trusted; occasionally, from ignorance, more often from inattentiveness to details, they will use a dirty syringe or fluid that is not aseptic. Sometimes it is not the nurse's fault at all, but the fluid or syringe gets accidentally contaminated. [Two illustrative cases, in which infection was carried by a dirty syringe and contaminated water respectively, have had to be omitted here.]

Routine vaginal syringing is recommended by some on the ground that every uterus and vagina contain septic organisms, which are likely to set up blood poisoning after parturition, unless they are washed away or rendered inert by some antiseptic solution. But, if this hypothesis be incorrect, and if as a fact the great majority of uteri and vaginæ contain no pathogenic organisms, then the need of the practice based upon it falls to the ground. Syringing the vagina and the uterus in suitable cases is of the highest value, as, for instance, where there is an offensive discharge. Some maintain that, although routine vaginal syringing may not be necessary, yet it is grateful to a patient. This may be quite true, and no doubt it is true also that syringing lessens the lochial discharge, but those are not the points raised in this paper. Many practitioners who had begun to have routine vaginal syringing carried out in all their labour cases, have, on my advice, discontinued it, with, so far as I know, just as good results as before.—*The Practitioner, October*, 1897.

102.—"MEDDLESOME MIDWIFERY."

By W. Japp Sinclair, M.A., M.D.,

Professor of Obstetrics and Gynæcology in Owens College, Manchester; President of the Section of Obstetrics and Gynæcology.

[The following is taken from Dr. Sinclair's important address, before the Montreal meeting of the British Medical Association, on "Injuries of Parturition: The Old and the New."]

I have endeavoured to trace the course of change in obstetric practice in England, and to indicate its causes. That practice is now, in my estimation, vastly too meddlesome and mischievous, and some reform is urgently required. Probably few men, even in the medical profession, who do not actually see midwifery practice among the working classes of our large towns, or have their attention constantly drawn to the injuries resulting from that practice, are aware of the actual state of affairs. In Manchester, and the manufacturing towns of

Lancashire, the proportion of cases in which the forceps are applied, with or without indications, amounts to 25 or 30 per cent., and even more. One of my friends, who has a large general practice within the area covered by our Maternity Hospital, has been good enough to give me a statement of his midwifery practice for the last ten years, and the proportion comes as nearly as possible to 25 per cent. Another friend, whose practice mostly lies within the same area, tells me that his proportion is at least 30 per cent. A busy practitioner, whose field of operation lies in one of the largest manufacturing towns in Lancashire, told me, in answer to the question which I so frequently put, "What is the percentage of forceps cases in your practice?" that his was "At least 75 per cent." "But," I replied, "you must be joking." "Not at all," he said, "between high and low applications of the forceps, at least 75 per cent." Now, I have been frequently told by practitioners in similar communities, that in the case of a multipara they allow half an hour to an hour for the second stage of labour, and if the case does not show signs of immediate spontaneous completion, they apply the forceps. Now, before passing judgment on this kind of practice, as to whether it is reasonable, or unavoidable, or praiseworthy, or the reverse of all that, we must find a criterion of good practice. For my present purpose I naturally put before you, in the first place, facts with which I am conversant, and can establish beyond dispute. I have here figures showing the details of two years of the practice of the Manchester Maternity Hospital. The hospital contains only twelve beds for in-patients. The home-patients, who form the great majority, are attended by more or less trained and experienced midwives. My figures show that the forceps deliveries among in-patients are in a comparatively high proportion, but it must be explained that the hospital beds are understood to be retained for cases of difficulty and danger; hence a large proportion of the women admitted have a history of difficult or operative labour in the past. The proportion of forceps deliveries among those in-patients is almost exactly 9 per cent., and no woman died after the use of the forceps. Now, in 2,049 home-patient deliveries, the forceps had to be applied by the obstetric physician 29 times—that is, as nearly as possible, 1·4 per cent. . . I have already called your attention to the fact that within the same area of population, but among the class of people who can afford to pay for private medical attendance, the proportion of forceps deliveries is from 25 to 30 per cent. Such a striking contrast surely supplies food for reflection, and calls for explanation. My inquiries into the need for such operations and their consequences, have gone on intermittently for the last twelve years, and I have noted with great satisfaction the rising protest in Germany against the abuse of the forceps.

There is now a considerable literature on the subject of forceps deliveries. There is not time, nor is this quite the occasion for going into many details on the subject. It would be tedious and serve no good purpose to multiply experiences. All that we see and all that we read, seems to point to the fact that we have replaced the one great injury of parturition of former generations—vesico-vaginal fistula—by a host of others, vesico-vaginal fistula by laceration, instead of by sloughing included. There is a general impression that sloughing was very common in former generations, owing to long-continued pressure. It is extremely difficult to get any information on the relative frequency. I have gone through the 700 cases which form the material of Mauriceau's work, and have found only six cases in which incontinence of urine resulted from tedious labour. The utero-vesico-vaginal fistulæ which we have to deal with are not extremely rare, and these are invariably produced by premature application of the midwifery forceps in primiparæ. There can be no question that many other such fistulæ are produced, but we never see them, because the patients died in childbed. In addition to the lacerations, and disablement of which come from them as lacerations, there are numerous other acute and sub-acute troubles, such as parametritis and cicatrisation.

My present purpose is not so much to attempt to prove anything to demonstration, as to call attention to certain obvious evils, and by a plain statement of facts to establish a *prima facie* case for closer investigation of the question. I may, however, without irrevelance, remark now, that I have myself a firm conviction that serious evils exist; that a vast amount of unnecessary misery is produced; and that it should not surpass the wit in man to find a remedy. I am quite aware of the difficulties that meet the individual practitioner. I have been too long a general practitioner, before specialising, to have missed my share of those experiences. Among the causes which give rise to the present abuses, must be put in a high place our over-confidence in antiseptics. Too many of our practitioners think that they can do anything in the way of manipulation, digital or instrumental, if only they use some chemical solution with sufficient copiousness. This, I am afraid, is a fatal delusion. It is a pathetic and humiliating sight to see a healthy young woman dying in childbed, because the medical attendant has thought it right to risk the production of injuries in a first and normal labour, under the mistaken impression that he can prevent bacterial invasion by means of some weak solution of permanganate of potash, of mercury, or other chemical which he calls an antiseptic.

The great difficulty in the way of either prevention or reform of abuses, is the want of systematic practical instruction in

maternity hospitals, the absence of the precept and example of the best available men at the bedside. The consequence is that our young medical practitioners, at the commencement of their careers, have to learn midwifery by a process which amounts to involuntary experiment upon their patients. While the German medical student learns midwifery and gynæcology as he learns surgery, and the subject ranks with medicine and surgery in the examinations, we are still content to insist, as far as practical instruction in obstetrics is concerned, merely upon a formal compliance with certain regulations, which do not necessarily imply practical knowledge worthy of the name. —*Medical Press and Circular, October* 10, 1897.

103.—SHOULDER PRESENTATIONS IN MIDWIFERY PRACTICE.

By Robert Pollok, M.B., C.M.

[The following is from Dr. Pollok's paper:]

I have had some little experience of this subject, having had to deal with such malpresentations fifteen times, twelve cases occurring in my own practice, two with medical friends, and one in the practice of a midwife. I am eliminating from my own experience premature labour, anencephalous or other monsters in which there is a large quantity of liquor amnii, and which usually present in a transverse manner. The case which suggested the subject of this paper occurred about a fortnight ago. Mrs. R., aged 32 years, was in her fourth confinement, and took ill about midnight. Dr. James Maclean saw her in the early morning, and waited for some time. The pains were slight, and the os was not dilated to any extent. From abdominal, as well as vaginal examination, he concluded he had to deal with a transverse case. I saw the lady about 12.45 midday, and corroborated his diagnosis. In conformity with my usual practice, I proceeded at once to effect delivery. The membranes were intact, the os was now nearly fully dilated, and so my mind was quite easy about the management of the labour, which was concluded in about fifteen minutes. When the patient was fully under chloroform, I quite easily completed the dilatation of the os, and gently insinuated my left hand in the form of a cone along the inside of the uterus, following the hollow of the sacrum on to the fundus of the uterus, where, having felt for a foot, I ruptured the membranes, and, with my right hand externally on the abdomen, raised the head which was lying in the left groin, and completed podalic version, never losing hold of the foot until I had brought it through the vagina. The hip of the other limb followed, and the trunk

descended. I then brought down the arms in the usual way. The head was large, and as the pelvis of the woman is not a roomy one, there was considerable difficulty in getting the head delivered. By flexing the body of the child well towards the abdomen of the mother, depressing the chin, and hooking the finger in the mouth, delivery was accomplished. The child was pretty much cyanosed, but by the practice of Schultze's method of restoration, along with alternate douching with hot and cold water, it soon recovered, and both mother and child did well. The whole process of delivery was accomplished with as much ease and as rapidly as an ordinary forceps case, which happens as an everyday occurrence in all our practices.

Contrast this with another case I saw, where the woman had been in labour two days. At the time I visited, the patient was in a weak and collapsed condition. The hand was presenting, so there was no difficulty in diagnosis. I turned with considerable trouble, pushing up the hand and shoulder, and tilting them on to the left side, and then I managed to get my left hand, as in the previous operation, along the hollow of the sacrum, and brought down the foot. It was a somewhat tedious business, as it always will be when the liquor amnii is drained away and the uterus firmly contracted on the fœtus. However, version was accomplished safely enough, but the shock to the mother, coupled with the exhaustion due to two days' hard but ineffectual labour, as well as the laceration which had occurred from repeated examinations, proved too much for the patient, and she succumbed some days afterwards. Of course, the child was dead long ere I saw the case.

Allow me to relate another instance of shoulder presentation which I saw with two medical men shortly after delivery had been effected. When the physician in attendance first saw the patient, he had not been able to make out any presentation, and as the os was not fully dilated, he elected to wait. On being summoned some time afterwards, he found the waters ruptured, and diagnosed a hand. He at once sent for a friend, and they performed podalic version. Shortly afterwards, mischief appeared in the shape of collapse. I then saw the woman, and in course of conversation or consultation with them, judging from the history and condition of the patient, who appeared suffering from shock, I ventured the opinion that rupture of the uterus had taken place. At the post-mortem, which was granted, and which we were all anxious to have, a very large rent was found. The specimen I have still in my possession. These two cases happily complete my experience of the dark side of shoulder or transverse presentations, and I can turn with satisfaction to the other thirteen, which were delivered with safety to the mother and child. I attribute this success wholly to the early recognition of the malpresentation,

and to the one and never-varying line of my procedure in such cases. If we stand shivering and in a dubious attitude, or if we are too inquisitive about knowing accurately whether it is a right shoulder or a left, a dorso-anterior or dorso-posterior, or amuse ourselves with attempting cephalic version, or play at the bipolar method of turning, and thereby run the risk of allowing the membranes to rupture, and therewith our great safeguard to ebb away, the case will assuredly came to grief. It is very interesting to know whether "spontaneous evolution" may occur or not. According to Denman, it may, but even in the instances recorded by that observer the children were born dead. It would be to me amusing to read the diagnosis of shoulder presentations given in most text-books, if I were not conscious of the gravity of the situation. Such diagnosis is given as—on abdominal examination the head is found in one flank and the breech in the other; on vaginal examination the finger may detect the clavicle and the spinous process of the scapula, or the ribs may be detected, and, if still in doubt, it may be even advisable to pull down the hand and arm.

I am fully convinced that, with the exception of the first of these directions—viz., the abdominal examination, which is wellnigh impracticable, for the very cases in which this presentation occurs are those in which the abdomen is pendulous and flabby, so that you cannot accurately map out head and breech through it—I say, with the exception of this examination, every other is attended with the greatest danger. Whenever, on vaginal examination, we find that we cannot make out any presenting part, or we find an elongated "bag of waters" projecting through the os, arising from the absence of descent of the fœtus, we may be certain that we have one of two things to deal with—either a very narrow conjugate diameter, or a shoulder or transverse presentation. In such conditions I consider it wise to act for either emergency. With the arms stripped up to the elbow, thoroughly washed, disinfected, and anointed with glycerine and carbolic acid in the proportion of 1 to 40, I gently insinuate my left hand into the vagina, cautiously dilate the os, and, following the hollow of the sacrum, I soon satisfy myself in the most emphatic manner as to what I have to deal with. If it be a deformed pelvis, I judge of the size, and proceed according to the well known laws which apply to such contractions. The management of such deformities is, however, outside the province of this paper. If I meet with no undue projection of the sacral promontory, I can easily, and without fear, rupture the membranes, and diagnose in the most certain way the true nature of the case. The arm is plugging the os, and will act as an efficient barrier to the escape of the liquor amnii. If the

case be a transverse one, I seize the knee or foot, and gently bring it down, at the same time lifting the head up with my right hand on the abdomen. In withdrawing my arm, the rush of water assists the version, and in less time than I am taking to narrate the operation, version is accomplished, and delivery is then concluded as an ordinary footling or breech.

Such has been my method, and with successful results in every case, both to parent and offspring. Of course, if when you see the case, the os is not much dilated, it is always advisable to administer an anæsthetic, but in earlier years, when I had not always an opportunity of seeing the case early, and where I dreaded rupture of the membranes from severe expulsatory pains, I have frequently accomplished version in the manner described, without the mother even being conscious there was anything amiss. When the membranes are unruptured, and you have a pelvis measuring not less than three inches in the conjugate diameter, the gravid uterus is as clay in the potter's hands, and you can accomplish all things. The most awkward presentation may be turned into a comparatively easy one, and the gravest condition may be successfully grappled with, whether it is a case of eclampsia, placenta prævia, or accidental hemorrhage. The only objection that might be urged against rapid delivery in untoward cases might be the supposed danger of introducing the whole hand into the uterus. I am firmly of opinion that, when the membranes are intact, and if due care be taken to cautiously dilate the os, with the hand and arm thoroughly aseptic, there is no risk. The average circumference of the hand in the form of a cone measures about eight or nine inches, in my own case $7\frac{1}{4}$ inches, that of the smallest fœtal head is not less than eleven inches, so that you have not to dilate the os to any unnatural extent. In truth, in dilating the os cautiously with the hand, you neutralise the danger which in some cases does occur—viz., the contraction of the os round the neck of the child in head-last cases. This last fact is also, in my opinion, one of the objections to the bipolar method of turning advocated by Braxton Hicks, besides the danger of rupturing the membranes. In my experience, the dilatation of the os of the gravid uterus at the commencement of labour with one finger, then with two and three, until you get the whole hand through, is by far the safest method to adopt. You feel what you are doing, and you can modify to any degree the amount of pressure. The method is cleanly, and far more serviceable than Barnes's bag, which I have long ago discarded. I consider, for dilatation and version, and many other obstetric operations, there is only one instrument safe, reliable, cleanly, and always present, and that is the "obstetric hand."

If we reach a case long neglected, the membranes ruptured,

the arm and shoulder wedged firmly down in the pelvis, rather than run the risk of laceration with subsequent metritis and its attendant puerperal septicæmia, or uterine rupture by attempting to turn, I think, with the rapid and satisfactory advance of abdominal surgery, we will obtain far better results from Cæsarean section.—*Glasgow Medical Journal, June,* 1896.

104.—A CASE OF CÆSAREAN SECTION.

Under the care of Dr. BRAITHWAITE, Obstetric Physician and Surgeon to the Leeds General Infirmary.

[Reported by J. A. CLOUGH, M.B. Lond., Resident Obstetric Officer.]

E. A. O., aged 26, was admitted on May 17 last. She had had one child six years before, and the labour was easy. The patient became pregnant for the second time about October, 1896, but as she did not remember the date of her last menstrual period, this was a little uncertain. At the beginning of December, however, she felt a "click or crack," but no pain or faintness. She noticed nothing else, and went about her work as usual. A week after this she felt the movement of the child, and then went on satisfactorily. Dr. Salisbury, of Stanningley, on being sent for on May 17, the patient thinking labour had commenced, found the following state of affairs:—A large centrally-placed tumour was felt, resembling a full term pregnant uterus, in which the parts of a child could be distinctly felt; the head was placed to the left and the limbs felt to the right, the back lying behind. The placental *souffle* could be heard, and also the fœtal heart sounds. (These were never audible subsequently, nor after her admission to the infirmary could they be detected.) The child could be felt to move distinctly by palpating the abdomen. Bulging into the roof of the vagina was a fluctuating tumour, completely filling the pelvis, and feeling like a thin-walled cyst, soft, but somewhat tense from the pressure it was subjected to. The finger could not be passed between this and the walls of the pelvis in any direction. Anteriorly and high up behind the pubes was the cervix, which could only be touched with difficulty.

Dr. Braithwaite saw the patient at her own house with Dr. Salisbury, the same afternoon. The os was closed, and labour had not actually commenced, but it seemed threatening, and it was evident that the pregnancy had reached full term. She was brought to the Leeds General Infirmary for operation at once, as there could be no doubt that the pelvis was occupied by a tumour, probably broad ligament or ovarian, and that delivery, except by Cæsarean section, was impossible. The

operation was done by Dr. Braithwaite, on May 19, with the assistance of myself. The patient being under ether, an incision was made just to the right of the middle line from above the umbilicus to within 1½ inch of the pubes, and the peritoneal cavity was opened. The uterus, when exposed, was found to be of a slaty blue colour, closely resembling that of a multilocular ovarian cyst, but of a darker blue. This unusually dark colour was probably due to the placenta having its attachment anteriorly. An incision was made into it, when bleeding took place freely. The incision was very rapidly enlarged, the hand passed into the uterus, and the head of the child brought out, the rest of the body quickly following, with the placenta and membranes, which were carefully peeled off the uterine walls. The hand passed into the uterus felt the cervical canal open. A sponge wrung out of hot boracic lotion was put into the uterine cavity, and several placed around the uterus, and the latter then pressed upon to promote contraction. No elastic ligature was used around the base of the uterus, and it is probable that if it had been used the hemorrhage would have been no less, on account of the anterior position of the placenta. The wound in the uterine wall was closed by silkworm gut sutures, placed at intervals of about two to the inch, and just missing the surface of the interior of the cavity, but including the edge of the peritoneum at the edge of the incision. A curious fact was noticed, which I cannot find to have been previously mentioned, viz., the extreme looseness and movability of the peritoneum upon the whole surface of the empty and contracted uterus. This results from this membrane not having quite the same shrinking power as the uterus itself, or, in other words, its elasticity does not equal the contractile power of the organ it covers. Taking advantage of this, Dr. Braithwaite closed the peritoneum over the wound by a continuous catgut ligature, completely burying the original silkworm gut sutures, and making the wound quite safe from the possibility of leakage. Behind and below the uterus was found the tumour, which, when brought out of the wound, proved to be a multilocular ovarian cyst. The pedicle was tied with strong silk, and the cyst removed. The left ovary was found to be normal. The uterus was contracted thoroughly by means of hot sponges, the abdominal cavity sponged out, and abdominal wall closed. Owing to the loss of blood, saline solution was transfused into the basilic vein as a matter of precaution. It was not absolutely necessary, as the loss, although considerable, was not excessive. The child, a female, was living, and found to be fully developed. The mother made an uninterrupted recovery, and was discharged on June 16, both mother and child quite well.—*British Medical Journal, July* 24, 1897.

105.—COMPLETE INVERSION OF THE UTERUS; DURATION, A FORTNIGHT; REDUCTION BY MANIPULATION.

By F. F. Schacht, M.D.

Mrs. L., aged 25, was attended in her confinement by Dr. J. Farr, to whom I am indebted for notes of her case. She was a neurotic, anæmic woman in her first confinement, and the pains came on at the full time on June 29, 1897. The presentation was normal, but the progress of the labour being very slow, she was delivered with forceps. There was no difficulty in doing so, and the perinæum was not torn. She was given half a drachm of liq. ergot. directly afterwards. There was some little delay in the expulsion of the placenta, but it came away without any violent traction, and was in no part adherent. There was no collapse or symptom of shock at any time. During the first two days after the confinement, there were some strong pains which were looked upon as ordinary "after-pains," and which the patient herself thought were due to her not being able to pass her water. Retention of urine, requiring catheterisation, lasted till July 6 (eight days), after which date she was able to pass water naturally. There was free loss but nothing excessive for the first ten days, then the quantity became less and the character of the discharge altered to a dirty-brown colour, with an offensive odour. The patient had been douched with a perchloride solution all through. The temperature chart shows that at no time was the temperature over 100·4° F., and it varied between that and 99° F. during the first fortnight. In consequence of the nature of the discharge, Dr. Farr made an examination, and discovered a mass in the vagina which he diagnosed as the inverted uterus. I saw the patient with him on July 12, that is to say, the fourteenth day after the confinement. Beyond looking pale, and having a slightly brown furred tongue, there was nothing very noticeable about her. There was no local tenderness, and examination was quite easily and completely effected, with very little discomfort to the patient—in fact, she herself did not think there could be anything sufficiently wrong to necessitate any interference, much less the use of an anæsthetic. The diagnosis, however, was quite clear, and under an anæsthetic the uterus was duly replaced. She had no after trouble, the discharge became sweet and gradually ceased, while the temperature sank to absolute normal.

There were several points of interest in this case. The severe pains, which were treated as after-pains, were in all probability due to the contraction of the uterus, though not in a normal manner. Whether the uterus itself contracted irregularly, and

the inversion took place the day after the confinement when the pains began, or whether the fundus uteri followed the placenta, it is impossible to say. It is clear that the absence of the contracted uterus per hypogastrium was not observed at the time. On the other hand, the pains, which were sufficiently severe to be definitely treated, the retention of urine, and the œdematous condition of the fundus when noticed in the vagina, point to the inversion having taken place within a short time of the confinement itself. There were no general symptoms resulting, and the only noticeable feature of the temperature was that it kept a little above normal. It seems certain, then, that when I saw the case the uterus had been inverted for from twelve to fourteen days. It occupied the vagina, its surface was smooth except over the placental site, but there was no evidence of the placenta having been adherent. It was only just possible to feel (with an anæsthetic) the tightly constricted cervix high up. The differentiation of the condition from that of polypus was easy. The patient being a spare woman, there was no difficulty in determining the absence of the fundus above the pubes, in fact, I could, by bimanual examination, make the fingers of my two hands (one on the abdomen and the fore-finger of the other in the vagina) impinge on one another. I found, however, what I have had occasion to notice before, that even under an anæsthetic, I could not perform that pretty text-book test of this particular condition, viz., that of making a finger in the rectum impinge on a sound passed into the bladder and directed backwards over the cervix uteri. I indeed question whether this can be practically carried out unless there is some prolapse or procidentia of the uterus pre-existing. As to the actual reduction of the œdematous fundus, I found it necessary to introduce the whole hand, in order to have the use of several fingers to manipulate, steady, and knead the uterus. With the assistance of the other hand on the abdomen, I was able, after some minutes, to push a portion of the cervical section of the uterus up through the constricting cervix. When the process was once started it went on rapidly, and finally the fundus itself jumped back into its proper position. The uterus was douched and packed with gauze, which was left in for twenty-four hours.—*British Journal of Gynæcology, August*, 1897.

106.—SERUMTHERAPY IN PUERPERAL SEPTICÆMIA.

By Ernest A. T. Steele, L.R.C.P. Lond., M.R.C.S. Eng.,

Honorary Medical Officer, Plaistow Maternity Charity.

[The table of cases has had to be omitted.]

As the number of recorded cases of puerperal septicæmia which have been treated with antistreptococcic serum, is still

small, it is highly desirable that all such cases should be published, in order that a true estimate of the value of this treatment may be made, and rules laid down for guidance as to the dose, time, and frequency of administration, and the selection of cases in which it will be of most benefit. To the following abstract of the notes of three cases in which I have used the antistreptococcic serum, I have appended a table of twenty-three cases so treated, collected from various publications, showing the date of onset of the malady, the date of the first injection, the number of injections, with the quantity injected, and the result. In no case can it be said with certainty that the treatment was followed by ill-effect, which could directly be attributed to it. Gaulard thought that the fatal result of his second case was due to an overdose of serum, but, as Dr. J. D. Williams pointed out, this was most probably a mistaken view, and several cases are shown in the table, where more than twice the quantity Gaulard gave has been administered without harm. In fact, in Kennedy's case, the quantity given as the initial dose equalled the quantity given by Gaulard in four injections. In Dr. Williams's second case, the patient developed a patchy pneumonia on the seventeenth day, which the medical man in attendance thought might be due to the serum; and Dr. Williams suggested two explanations:— First, that possibly the serum was imperfectly filtered, and living streptococci were injected; if this were so, one would rather have expected an abscess at the site of the injection, but no mention is made of this having occurred; secondly, that an efficiently-filtered serum might give rise to the pneumonia. I can find no record of this having occurred in the other cases, in several of which a larger quantity of serum was used. Those cases in which the serum was injected soon after the onset of symptoms and in a fairly large initial dose, appear to have done best. When the treatment has been delayed, convalescence has been more protracted.

The table shows that the earlier the onset of the disease after parturition, the more severe the symptoms. In all the fatal cases the symptoms began early. It would probably be best in such cases to give a large initial dose (30 c.cm. or more) as soon as the diagnosis is established. Of the total number of twenty-six cases, sixteen recovered, ten died; these ten deaths, however, include Vinay's four cases in which the treatment was not adopted till very late, and although he states that benefit was derived from the serum, organic lesions were already established which caused death. Excluding Vinay's cases, there were six deaths to sixteen recoveries—a mortality of 18·18 per cent.

The antistreptococcic serum being only of value in streptoinfection, a bacteriological examination of the uterine

discharges should, when possible, be made in order to determine the presence or absence of the streptococcus. The use of the serum in no way dispenses with the necessity for local treatment (curetting, douching, &c.), as probably in all cases of puerperal septicæmia there is a mixed infection, and other organisms besides the streptococcus pyogenes are present in the uterus, and capable of causing a fatal toxæmia, if their growth is not prevented.

Case 1.—Mrs. B., aged 34, 11-para, has had bad health during the whole of pregnancy, with considerable leucorrhœa. She was attended in her confinement by a qualified midwife from the Plaistow Maternity Charity. Confined October 11, 1896. Breech presentation, which presented no difficulty. In the evening of the day of her confinement her temperature was 103°. I saw her on October 13, and found the temperature 103°, pulse 120, skin hot and dry, tongue moist with white fur; abdomen distended; uterus on a level with the umbilicus and tender on pressure; lochia normal in quantity and not offensive. Ordered perchloride douches and quinine. October 14.—Morning temperature 102·8°; pulse 120 and of good quality; general condition the same. Gave injection of 10 c.cm. antistreptococcic serum. In the evening the temperature had risen to 103°, the abdomen was more distended; another injection of 20 c.cm. serum was given. October 15.—Morning temperature 103·8°. Uterus smaller and not so tender, abdomen softer, general condition the same; 10 c.cm. serum injected; evening temperature 104°, pulse 130; 10 c.cm. serum injected. October 16.—Morning temperature 103°, evening 104°; general condition worse. No more injections given. Died same evening. No bacteriological examination made.

Case 2.—Mrs. B., aged 30, a thin, anæmic woman, who has been in a bad state of health lately. Confined October 29, 1896; placenta prævia, from which there had been considerable hemorrhage before I was summoned. All went well till November 1, when she had a slight rigor and her temperature rose to 103°. With intrauterine douches of mercuric chloride she did well till November 5, when, owing to illness, I did not see her till November 9. During my absence the douches were omitted for thirty-six hours, and the lochia became offensive, the temperature rising to 105°. November 9.—Morning temperature 101°, pulse 112. Gave 20 c.cm. antistreptococcic serum. A cover-glass preparation of the lochia taken direct from the uterus by means of a speculum showed long chains of streptococci. Evening temperature 102·6°. November 10.—Morning temperature 99·4°, pulse 108. Patient's general condition good and takes food well. Another 20 c.cm. serum injected. Evening temperature 102·6°. Douches continued. November 11.—Morning temperature 101·4°; 10 c.cm. serum injected; has slight diarrhœa. November 12.—Morning temperature 100·2°, pulse 108. General condition improving; the douches to be discontinued. Evening temperature 101°. November 13.—Morning temperature 99·8°, evening 100°. Diarrhœa ceased and patient doing well. From this date the patient's recovery was steady and uninterrupted.

Case 3.—Mrs. K., aged 35, miscarried February 2, 1897, at the third month. Had no assistance at the time, and has had considerable hemorrhage since according to her own account, February 9.—Patient sent to the Maternity Charity for help as she was feeling very ill. She was seen by Dr. Geddes, the resident medical officer, who found her with an offensive vaginal discharge and a temperature of 102°. Some fragments of decidua which protruded from the os uteri were removed and an iodine douche given. In the evening the temperature rose to 105°, and I saw her

with Dr. Geddes. I found that the patient had a retroflexed uterus, and that the fundus contained a quantity of decomposing fragments of decidua, which were removed with the curette and a perchloride intrauterine douche given. February 10.—Morning temperature 101°. Patient comfortable; uterus smaller and os closing; very little discharge. In the evening the temperature rose to 102°, and, as an examination of the lochia revealed the presence of streptococci, 10 c.cm. of antistreptococcic serum were given. February 11.—Morning temperature 100°; evening normal. Recovery uneventful from this date.—*British Medical Journal, October 2, 1897.*

107.—THE PATHOLOGY OF DYSMENORRHŒA.

Some months ago, before the Netherlandish Gynæcological Society, Dr. Mendes de Leon, as we learn from the *Centralblatt für Gynäkologie*, for July 17, combated the obstruction theory of dysmenorrhœa. He would divide dysmenorrhœa into two classes, namely dysmenorrhœal endometritis, and uterine spasm (essential dysmenorrhœa). The first class would include all forms in which there was any local mechanical obstacle recognisable, such as a sharp turn in the uterine canal with secondary proliferation of the mucous membrane, stenosis, and the typical dysmenorrhœal endometritis. All other cases would fall under the head of uterine spasm. On the strength of Keiser's investigations, he was inclined to regard this spasm as affecting the sphincter of the uterus, that is, the cervix. Out of 167 patients observed by the author, during a certain length of time in the gynæcological department of a public clinic, thirty-seven had complained of painful menstruation. In thirty-two of them a local cause was discovered, but in the five others, certainly virgins, the affection should be classed as spasmodic. Besides these thirty-seven subjects of dysmenorrhœa, there were among the patients twenty-one who had manifest stenosis without painful menstruation. Among the patients subjected to curetting there were seventeen who complained chiefly of dysmenorrhœa, but only one of them had stenosis to a high degree. Of these seventeen, eight were completely cured by curetting; of the nine others, seven returned in the course of a year with a relapse of their old trouble, and two received absolutely no relief. At their earnest request, one of these women was subjected to oophorectomy, and the other to removal of the uterus.

Dr. Treub remarked that stenosis might be due to swelling of the mucous membrane occurring only at the time of menstruation, and be undiagnosticable at other times. If Keiser's investigations warranted the theory of spastic contraction, he thought high amputation of the cervix should be performed. Dr. Stratz called attention to the fact that diseases of the ovaries and of the Falloppian tubes might occasion dysmenorrhœa. He mentioned a case of dysmenorrhœa and

sterility in which, after the failure of all the measures practised in Holland, Schröder's conical excision of the cervix had done away with both complaints. Dr. Van Tussenbroek stated that in the case of oöphorectomy reported by the author of the paper, the microscope had revealed "subacute oophoritis."

Dr. Van de Poll believed in heredity as a cause of nervous dysmenorrhœa. In a family known to him two daughters suffered with dysmenorrhœa, a son had dyspepsia, and the father was a drinker; in another family three girls had dysmenorrhœa, a boy had nervous dyspepsia and headache, and the father was not a drinker. In this discussion, as usual, when such a subject is talked about, nobody seems to have convinced anybody else; the author of the paper declared, in his closing remarks, that he still stuck to his classification, but he promised to try high amputation of the cervix in subsequent cases of hysterospasm. Our own opinion is, that there is much to sustain Dr. Mendes de Leon's main contention.—*A leading article in the New York Medical Journal, August* 7, 1897.

108.—SOME DISPLACEMENTS OF THE UTERUS, WITH INDICATIONS FOR THEIR TREATMENT.

By J. E. Gemmell, M.B. Edin.,

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[We have selected the passages in Dr. Gemmell's paper dealing with treatment.]

Anteversion.—Pathological anteversion we define as that position of the uterus with the fundus lying forwards and the cervix backwards, the two almost in a straight line, and this position remaining stationary; with such a position, one assumes a certain amount of rigidity or fixation, and there is no degree of flexion.

Treatment.—The treatment of such a condition is to get absorption of the inflammatory deposits in the uterus and in the folds of Douglas, and as this improves, the uterus will regain its position, when it may be assisted by means of a Graily Hewitt pessary or "cradle" pessary, which supports the uterus at a point just above the internal os in front, and gets some purchase from the anterior wall of the pelvis to throw it backwards.

Anteflexion.—For the pathological anteflexion, get rid of the inflammatory products producing it, and secure as much rest for the folds of Douglas as possible. Do not allow constipation and passage of hardened fæces, yet avoid diarrhœa and straining, and soften the adhesions with hot water douches,

110°—120°, glycerine pessaries or tampons, and then gentle massage, either bi-manual or with the sound. (If the patients want a change, and can afford it, Kissingen and Marienbad, where treatment of mineral waters and baths, *i.e.*, application of heat, can be obtained). The treatment of the puerile anteflexion is more active; we are dealing with no inflammatory products, but with distinct mechanical disabilities, and require to open up the canal of the cervix. Many gynæcologists recommend posterior division of the cervix by means of Simpson's metrotome, or knife, but this method we have abandoned for the dilatation by Hegar's dilators. The former method of division of the cervix very frequently leads to parametritis, and again, being a clean-cut wound, it is apt to heal up very rapidly, or, if kept open by the passage of a sound, leads to risk of septic absorption; whereas dilatation gradually opens up the canal, over-stretches and destroys partially the elasticity of its walls, so that it never returns to its original calibre, and there is practically no risk of septic absorption or of parametritis. After dilatation there is distinctly less flexion, the angle of flexion being straightened out by the forcible dilatation, and the bend destroyed. With such a condition you can promise cure of the dysmenorrhœa when its exists, and with sterility it very much improves the chances of impregnation. In addition, attend to the general nutrition and health, especially if you are anxious to cure sterility.

Retroversion and Retroflexion, the two displacements backwards, are so intimately related to one another in symptomatology and treatment, that we consider it advisable to deal with them together. The treatment of retroversion and retroflexion consists in replacing the organ, and overcoming all conditions which have aided in bringing them about. In early cases, where the relaxation of the supports has not become extreme, stimulation of the uterus and rectum, with reposition of the uterus, will often be sufficient to restore it to its normal condition. Cold baths, and cold vaginal irrigation being of use in bracing up the folds of Douglas, and ergot as a stimulant to the uterus; at the same time, treatment of any uterine catarrh, and attention to the general improvement of health; this is to be aided by means to prevent passive extension of folds of Douglas by the use of vaginal tampons or a pessary, to prevent the uterus falling back. When the uterus has definitely taken up its position with the fundus in the hollow of the sacrum, it must be liberated as the first step, and this may be done by means of the uterine sound, or bi-manual palpation, and the latter method is the only proper one. If the uterus is easily lifted up by a sound, there is no doubt that it could have been lifted just as easily by the bi-manual method, and if force is required, more harm will be done by a forcible use of the sound

than can possibly be done by the bi-manual; and further, in using the latter method, we can always know accurately what is the obstacle to reposition, and at the same time can judge how we may best overcome such obstacles. The bi-manual method, except in simple cases, however, necessitates the use of chloroform, and when this is done, the patient should be placed in the lithotomy position with the coccyx at the edge of the couch or table, so that the vaginal hand can be well depressed. Introduce two fingers into the vagina, in the post fornix, and push the fundus upwards and towards the side to which it moves most easily, and as soon as the fundus comes to the pelvic inlet the outside hand takes charge of it, pressure on the anterior portion of the cervix very much assisting to bring it forwards, and if the vagina be small, the fingers may be introduced into the rectum to push the uterus forwards. Cord-like or flaky adhesions of the uterus to the posterior wall of the pelvis can be separated by cautious application of force; flaky adhesions are easily separated by the tips of the fingers; and cords may be seized by the finger in the rectum, and the fundus uteri being fixed may be slowly broken down by steady pressure. If the appendages are adherent to the posterior wall of the pelvis, we can only apply very gradual pressure, and if they do not yield with moderate force, it is better to desist, and repeat the operation in eight or ten days. A further aid in cases where difficulty is experienced in separating the adhesions is adopted by Schultze, and we have used it successfully, viz., dilatation of the uterus and introduction of the finger into it as a repositor. When the reposition has been accomplished, the patient must be kept in bed for some days; but, strange as it may seem, after so much mauling, pelvic inflammation rarely follows. Contra-indications to this method of reposition are acute inflammatory processes, the presence of peritoneal contractions, and parametric deposits. In cases of chronic parametritis, the usual treatment of douching, sitz-baths, glycerine tampons, and salines must be adopted. When replaced, the uterus must be kept there, and of all the numerous pessaries we have never failed to get a satisfactory result from a Hodge; and where the pelvic floor is deficient it must be repaired, or the whole treatment is of no use. For the treatment of long-standing cases of relaxed ligaments, uncomplicated by any adhesions, Alexander's operation of shortening the round ligaments may be adopted, combining with it repair of the perineum and the use of a pessary until the wound is healed soundly. The proceeding is very rational, and is simply a reposition of the uterus in its normal position by repairing the supports, and then the intra-abdominal pressure, and causes normally at work in keeping the uterus in its position, are brought into play. The operation, in a few cases which we have had, has been very

successful, one patient having been pregnant, gone to full time, and now convalescent, with the uterus still in good position. We might mention, in passing, a line of operative treatment that is decidedly heroic for retroversion—viz., hysteropaxy, or ventral fixation—and such a proceeding, which is recommended for those cases without any inflammatory fixation, is, in our opinion, unjustifiable, as well as being impracticable, because erroneous in its mechanics.

Prolapse or Descent of the Uterus.—By this we mean a descent of the uterus in the pelvis, and recognise in it three degrees:—(1) Where the uterus has descended from its normal position, but lies entirely within the vulva; (2) where it is seen outside the vulva; (3) where the whole organ is protruded outside the vulva.

Treatment.—(1) Prophylactic; (2) replacement; (3) retention; and (4) operation.

(1) *Prophylactic.*—Prevent too early getting up after parturition; always repair rupture of perineum; free use of vaginal douches early in the prolapse; reduce weight of uterus; suspend clothing from shoulders; keep the general health good; and avoid all straining at stool. (2) Always replace the uterus when you discover the condition; this is easily done in the Sims's or bi-manual position, and still more easily in the knee-elbow position. Replace the part that came down last first, and then seek means to (3) retain the position. Here is a difficulty. There are numerous supports, but we must remember that we have a condition in which there are absolutely no normal supports. It is a good plan to prepare the vagina by packing; keep the patient in bed for a week; douche every morning with an astringent, and pack with oakum, iodoform, or double cyanide gauze. My routine treatment is to choose, first of all, a ring pessary, and in many cases this is quite enough, but, unfortunately, they tend to over-stretch the vagina, and in this way rather make matters worse; then try the Zwancke's pessary; and, last of all, the Barnes cup and stem. Young women, who are likely to go on breeding, we generally treat with Zwancke and constant douching; this pessary they can very easily manage to remove and replace themselves. The great objection to it is the fact that it often gives rise to soreness and ulceration of the vagina and vulva, and in sitting down often causes pain. The Barnes pessary proves so very inconvenient, and in one case caused so much soreness and ulceration in the roof of the vagina, that we have abandoned it, and in cases where there is only Barnes or an operation for it, I recommend operation. (4) Operative procedure (whatever be the method chosen) must have in view the object of repairing all the conditions antecedent to the prolapse, and the only successful method must be on these

lines. The prolapse is complete, the vagina stretched and inverted, the bladder and rectum prolapsed, the perineum gone, and the uterus heavy; obviously, then, our operation must embrace the treatment of all, and we proceed on the following lines:—(1) Replace the uterus, beginning by returning the inverted vagina first, *i.e.*, the part that came down last. This done, proceed to (2) reduce the size and weight of the enlarged heavy, inflammatory uterus, by dilatation, and curetting if necessary, and aid this by vaginal douches and packing of the vagina for 1—2 weeks, the patient being in bed all the time, the rectum and bladder to be emptied regularly. The patient is now prepared for operation. Let her be placed in the lithotomy position, and proceed to repair the cystocele and rectocele, in doing which we narrow the relaxed and loosened vagina. The cystocele is repaired by removing an elliptical piece of mucous membrane from the anterior wall of the vagina, about $1\frac{1}{2}$ in. long, 1 in. broad, and bringing the edges together with catgut buried sutures. The next step is narrowing of the posterior wall, and we prefer the triangular flap of Hegar: the apex, about half an inch below the cervix—that is, on the posterior vaginal wall, under the pouch of Douglas—the sides of the triangle passing downwards and outwards on either side to the lower margin of the labia minora, and the base of the triangle, a line from these points round the posterior margin of the vulva. Catgut sutures are used, interrupted and buried, and the base of the triangle turned inwards, to complete the repair of the perineum, with silkworm gut. This completes an anterior and posterior colporraphy. Should the prolapse be due to hypertrophy of the cervix, the operative procedure simply amounts to amputation of the cervix, and possibly curettage; rarely does it require repair of the perineum. In one case upon which we operated, although the patient was a stout woman, and the uterus had been prolapsed some three years, yet her health had been maintained, and the ligaments had not become soft and lax, so that Sims amputation and the rest in bed afterwards made quite a successful cure, and when last seen, three years after operation, there was no return. The operations of Graily Hewitt, Simon, and Bischoff are all on the same principle of perineorrhaphy, the incision, however, being more complicated. Sims and Winckel go on the principle of barrier formation. In the operation we have just described, the only thing left undone is support from above; but we have not had a failure with the method, yet can conceive an advantage by combining the Alexander operation with it. Such a proceeding would not be out of place, although making too much work for the operator. Our German confrères have added the operation of hysteropaxy as the last step—*i.e.*, ventral fixation. An incision is made in the middle line, the uterus

lifted up, and two or three silkworm gut sutures passed through the abdominal walls and anterior wall of the uterus. It is doubtless an effective, though severe, method of treatment, and we do not think it will come much into use; yet it is easy to do, and is reported as being most successful. We have only done the operation once; so far it is all right, but what will be the result if pregnancy supervenes?—*Medical Chronicle.*

109.—THE CONSERVATIVE TREATMENT OF MYOMATOUS UTERI.

By Howard A. Kelly, M.D., Baltimore, Md.

The next great wave of advance in gynæcology will be a widespread application of the principle of conservatism to all but malignant affections, and this change will bring with it blessings to women greater than all the advances in exsective surgery which we have hitherto seen. I am here to-day to advocate the conservative treatment of myomatous uteri, to urge the plan of enucleating myomatous tumours of great size, and in any number, and wherever and however situated and attached, without the sacrifice of any considerable portion of the uterus. I do not refer to the enucleation of pediculated or sessile subserous tumours, or to the occasional splitting of the uterine muscle to enucleate an interstitial tumour; nor do I wish to dwell upon the operation of splitting open the uterus and removing a large submucous myoma through an abdominal incision, as first practised by A. Martin, of Berlin. I wish to extend the field beyond all these indications, and declare the perfect feasibility of extracting six, eight, a dozen, or even twenty or thirty myomata, big and little, and of sewing up the multiple incisions made, and leaving the patient with a practically normal and functionally perfect uterus.

As an operative procedure, such extensive myomectomies performed in large uteri, as big as five or seven months' pregnancies, are far more difficult to perform than the removal of the myomatous uterus—hystero-myomectomy. The operation requires greater technical skill, and the individual differences between the different operations are more diverse; it is therefore not a routine procedure like hysteromyectomy. Liability to sepsis is increased from the prolonged and intimate handling of the tissues, if the aseptic precautions of the operator are imperfect. Hemorrhage also is often far more difficult to control. In spite of all these objections, however, extensive myomectomies and multiple myomectomies are the operations of choice. The indications for the operation lie in the age and

condition of the patient. If the patient is in good or fair condition, and can stand a prolonged operation lasting thirty, forty, or fifty minutes, and is under 37 years of age, myomectomy should always be done. I would not do a myomectomy, as a rule, on a woman of more advanced years, or in one exsanguinated or profoundly depressed by any associated disease or complication.

The Operation.—A free incision is made into the abdomen, exposing the myomatus uterus, and if it can be done, this is lifted up into or out of the incision. The tumours are then cut out, beginning with the larger and the most accessible, and sometimes two or three are removed through one incision. A straight incision is made through the uterine wall, well down into the white fibrous substance of the tumour; this is then grasped with museaux forceps and dissected out with a blunt instrument like a curved spatula. The fingers and finger nails must not be used. If the tumour is a small one, it is rapidly shelled out, the bleeding points clamped if active, and the wound at once sewed up with interrupted catgut sutures, using enough of them and passing them deep enough to stop all hemorrhage. If the tumour is large, then it is often best to enucleate it step by step and close the wound, stopping the bleeding as you go. A deep wound in the thick uterine muscle may even take three or four rows of buried sutures to close it and stop all the hemorrhage. After the removal of the accessible tumours, the others are easier to reach, and the uterus may be pulled up and drawn sidewise, or tilted in extreme ante- or retroflexion to expose the field better. I have several times had to cut loose the bladder in order to remove a subvesical myoma of the cervix, and I have taken out a subperitoneal myoma filling the cellular tissue of the lower pelvis and pressing on the pubic rami. Hemorrhage is best checked by rapid work, by the well directed pressure of the fingers of an assistant at the base of the tumour, or by the constriction of the cervix uteri, if it can be reached, by means of fingers or a gauze rope. Buried catgut sutures must be so applied as to leave no dead spaces, and particular attention must be given to the angles of the incision, which are most apt to bleed. Before closing the abdomen, which is always done without a drain, the table must be dropped level and each wound minutely inspected. Sepsis is prevented by avoiding handling of the tissues. Traction is made with forceps, dissection is done with a blunt instrument, and if the lips of the big uterine incision have to be held apart, it is done with gauze pads, and not with bare fingers. It is well also to have the assistants wear rubber gloves, as recommended by Halsted, or Lisle thread gloves. The loop part of the ligatures which makes the tie and stays in the abdomen also need never be touched by the operator as he does his tying. A uterus

treated in this way is somewhat analogous to a Cæsarean uterus, with multiple wounds. I have made as many as seven, eight, and nine separate incisions in removing myomata in this way. The uterine cavity is, as a rule, not opened. I have in my clinic demonstrated the feasibility of taking out as many as thirty myomata, filling a soup plate, without opening the mucous surface of the uterus. In other cases I have opened the cavity from end to end. In one instance the whole anterior wall was torn up to the cornua, and formed a triangular flap of mucosa, which was attached in place by delicate sutures, the big wound closed, and the patient made a perfect recovery. In another case the entire anterior wall of the uterus was removed, leaving only the mucous surface of the posterior wall. A new uterus was constructed out of what remained, and the patient, who had before suffered intensely with profuse hemorrhages, has since menstruated naturally. The hypertrophy of the uterine muscle is sometimes so enormous that I have been unable, even after the extraction of all the tumours, to put the uterus back in the abdomen, in its natural position in the median line, and close the incision, but I have been obliged to turn the large gibbous mass well over to one side. Two of these uteri were as big as a child's head, at least fifteen times larger than the normal uterus. Both cases have done well, and involution has occurred during the convalescence.

This extensive conservative operation I have just described means much to the patient. It conserves a natural function, one of the distinctive attributes of sex, and it guarantees the possibility of conception and motherhood. What it may mean is well illustrated by a recent case, by means of which I would contrast my practice with the prevailing methods. A young woman, of about 30 years of age, had masses of myomatous nodules fixed in and choking her pelvis, and rising well into the abdomen; the only normal part of the uterus which could be distinguished was the cervical end. At her home in a Southern city, she got an opinion from a surgeon known all over the world, that her case was inoperable, the risks were too great. In this city (Philadelphia) she was told that hysterectomy was the only remedy. I promised to relieve her by myomectomy, which I did, extracting a number of large myomata, and leaving a much incised and much sutured, but otherwise intact uterus. She made a perfect and rapid recovery, and I have since learned that she is engaged to be married. Last, and not least, the gratitude of my patient for the preservation of all her organs is a great incentive to continue in this fruitful line of surgical work. In a case operated upon still more recently, the patient, a young woman in the twenties, has been married since the operation.—*Journal of the American Medical Association, October* 2, 1897.

110.—RETROVERSION OF UTERUS.

Mr. A. Lapthorn Smith's paper was based upon ninety-four ventrofixations and fifty-three Alexander's operations. He held that ventrofixation was the only operation that should be entertained in cases of retroversion with adhesions; but it should not be done when the uterus was movable, and when there was no disease of the appendages requiring abdominal section, in which cases Alexander's operation had given excellent results. There should be no death-rate to either operation, neither should there ever be hernia, either ventral or inguinal, if the following directions were followed. The two operations were equally easy, although a few years ago the author was opposed to Alexander's operation on account of its difficulty. Now he could invariably find the ligaments, and generally in from half a minute to a minute and a half. He warned his hearers not to do Alexander's operation if there were any adhesions, even if they were loose enough to permit the uterus to be lifted up, because they would be put upon the stretch, and would drag so much upon the ligaments as to finally pull them out of their anchorage. In laying down the technique of Alexander's operation he placed great stress upon the importance of putting aside all cutting instruments as soon as the skin, superficial and deep fascia, had been cut through. Instead of laying open the inguinal canal, as advocated by some writers, he advised his hearers not to cut a single fibre of the intercolumnar fascia, which was the principal support of the pillars. Moreover, he said, the slightest nick of the fascia of the internal oblique would lead to a false passage and failure to find the ligament. If no cutting instruments were used, but only a Péans' forceps, to draw out the ligament, there would be no difficulty in finding it, because there was nothing else in the canal but the ligament. In fact, with the eyes bandaged it could be found and drawn out, simply by introducing the closed forceps and then opening them, when the round ligament will fall into them, and can be drawn out. He advocated the use of fine silkworm-gut, which could be thoroughly sterilised and left in permanently. Occasionally he had been obliged to remove a buried stitch. In case any fibres of the intercolumnar or internal oblique should be accidentally cut, great care should be exercised, in sewing them up, to avoid hernia. He had only had one relapse from ventrofixation, and one after Alexander, which were both subsequently repaired. Several of the cases of ventrofixation had since become pregnant, and had had normal confinements. Also several cases of Alexander had had children. Many of the patients had been bedridden invalids for years before, and were now enjoying excellent health. Both operations, each in its proper sphere, had given the greatest possible satisfaction. (Abstract in Medical Press and Circular, August 11, 1897.)

Food-Stuffs, Instruments, &c.

Messrs. Burroughs, Wellcome & Co.—The activity of this enterprising firm in introducing new preparations, instruments of precision, &c., required by the progress of therapeutic knowledge, is well illustrated by the following notes :—

Serum-therapy.—Burroughs, Wellcome & Co. continue to devote great attention to the pharmaceutical progress of Serum-therapy. Antidiphtheritic Serum, liquid or dried, is now supplied in bottles or phials, each containing 1,500 Behring units. Though the weight or volume of the contents of a phial or tube may vary, the number of units represented always remain the same.

Until recently the demand for Antistreptococcic Serum (B. W. & Co.) exceeded the quantity it was found possible to produce. Now, however, the number of animals under treatment has been considerably increased, and it is anticipated that all demands will be met. This Serum has attracted considerable attention during the past year, and numerous cases of its successful use have been reported.

"*Tabloid*" *Thyroid Colloid Substance*, gr. ½.—The clinical evidence furnished by Surgeon-Major P. Jervis, I.M.S. (*British Medical Journal*, October 2, 1897), and others, indicates the special efficacy of "Tabloid" Thyroid Colloid Substance, gr. ½, in the treatment of obesity. This "Tabloid," which has recently been issued by Burroughs, Wellcome & Co., is prepared by the published process of Dr. Robert Hutchinson.

"*Tabloid*" *Medicinal Syrups.*—Hitherto represented only by "Tabloid" Easton Syrup, this group has been profitably enlarged by the addition of "Tabloid" Chemical Food (Phosphates Compound) and "Tabloid" Hypophosphites Compound. Supplies of "Tabloid" Medicinal Syrups can be carried in the pocket, and doses taken at the proper intervals without interfering with the usual routine of business.

"*Soloid*" *Products.*—A valuable group of "Soloid" Brand Products for the instant preparation of gynæcopathic irrigations has been introduced. It comprises "Soloid" Alum Compound (Zinc Sulphate and Alum, each 15 gr.), "Soloid" Zinc and Tannin Compound (Zinc Sulphate, 5 gr., Lead Acetate 10 gr., Extract of Opium 2 gr., Tannin 1 gr.), and Sodium Biborate Compound (Sodium Biborate 20 gr., Tincture of Opium 10 minims.)

It has been amply demonstrated that both cocaine and eucaine possess distinct advantages which render the former more suitable for some purposes, the latter for others. In ophthalmic

work, however, there appears to be growing evidence that a combination of the two has advantages not possessed by either drug alone. "Soloid" Cocaine and Eucaine Hydrochloride, ½ gr. each, has been introduced. The combination possesses the full anæsthetic properties of the cocaine with the less toxic qualities of eucaine. Anæsthesia is secured more quickly than if eucaine alone were used, and the tendency of cocaine to dilate the pupil is corrected by the opposing action of the eucaine.

Improved Rectal Suppositories.—A great advance in the rectal administration of drugs is achieved by the introduction of the "Enule" Brand of Suppositories. The improved shape not only renders introduction far easier than hitherto, but it also utilises the contractile face of the sphincter muscle to prevent expulsion after introduction. The Glycerine "Enule" contains absolutely 95 per cent. of anhydrous chemically pure glycerine, and is free from gelatine or similar bases. The "Enule" list comprises "Enule" Glycerine, children's or adult's Belladonna Extract, gr. ¼, ½, and 1; Bismuth Subgallate, gr. 10; "Hazeline," "Hazeline" Compound; Meat (predigested); Milk (predigested); Morphia Hydrochlorate, ¼, ½, and 1 gr; and Quinine Hydrochlorate, gr. 5.

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Water Analysis Case (B. W. & Co.)—This case is based upon the method advocated in "A Simple Method of Water Analysis," by J. C. Thresh, M.D., D.Sc., County Medical Officer of Health. It contains all the reagents and apparatus necessary to enable the medical man to perform such an analysis of a sample of water as will determine its suitability, or otherwise for drinking purposes.

Syringes.—Serum Syringe (B. W. & Co.)—The vast increase in the practice of serum-therapy has led to additional attention being paid to the construction of the Serum Syringe. The B. W. & Co. Serum Syringe is a compact instrument contained in a plain but handsome metal case. Its great advantages are the ease with which each part is detachable and rendered aseptic, and also an ingenious arrangement by which the

rubber plunger can be instantly and accurately adjusted to the calibre of the syringe barrel. There is no fear of the piston jamming or shunting as with ordinary packing. Altogether, the syringe, which is made in two sizes (5 c.c. and 10 c.c.), is most convenient, and may be used with all Serums.

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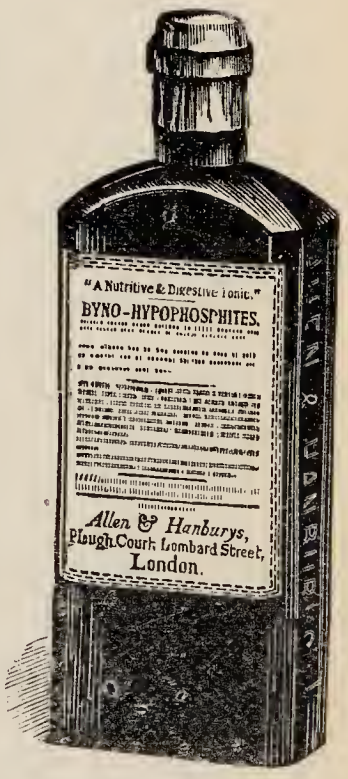

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